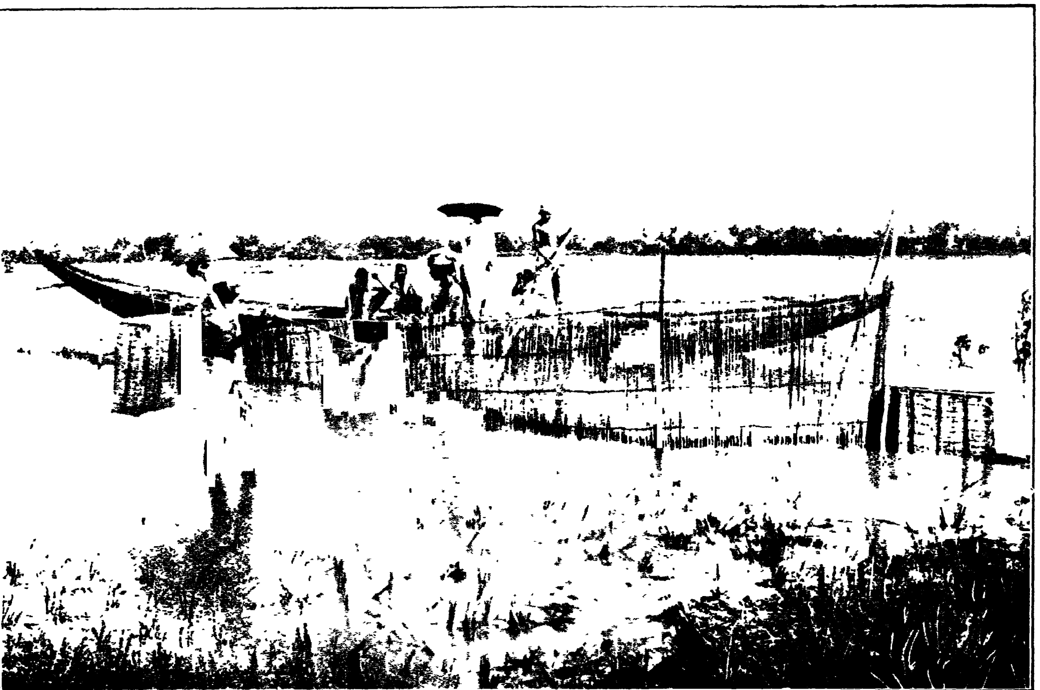
# THE FOUNDATIONS OF INDIAN ECONOMICS

## INDIA'S MESSAGE TO THE WEST

INDIA stands for living Humanity as against inert matter; for more equitable distribution of wealth; for less luxury and more brotherhood; for less industrial conflict and more co-operation; for wealth as a means as against wealth as an end; and for finding happiness not in restless self-serving but in the consecration of life to the welfare of Society and Humanity.

Pp. 450–61, 465–7.



THE BAMBOO TRAP ON THE MARGIN OF THE RIVER *p.* 86.

# THE FOUNDATIONS OF INDIAN ECONOMICS

BY

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WITH AN INTRODUCTION BY

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*WITH ILLUSTRATIONS*

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## नमस्तस्यै ॥

भूपश्चशतवार्षिक्यामना वृष्ट्यामनम्भसि ॥
मुनिभिः संस्तुताभूमौ सम्भविष्याम्ययोनिजा ॥ १ ॥
ततः शतेन नेत्राणां निरीक्षिष्यामि यन्मुनीन् ॥
कीर्तयिष्यन्ति मनुजाः शताक्षीमिति मान्ततः ॥ १ ॥
ततो ऽहमखिलं लोक मात्मदेहसमुद्भवैः ॥
भरिष्यामि सुराः ! शाकैरावृष्टेः प्राण धारकैः ॥ १ ॥
शाकम्भरीति विख्यातिं तदा यास्याम्यहं भुवि ॥

(MARKANDEYA CHANDI, Chap. XI., 46-49.)

" And I shall again be on earth when there has been drought, and scarcity of water for a hundred years, born not out of mother's womb when my praise will be recited by the Saints. Then I shall cast a look on mankind with hundred eyes, and they shall call me the hundred-eyed from that time. Then, ye Gods, I shall support the entire universe until there is rain with life-sustaining herb created out of my own body. From that time I shall be known on earth by the name Sakamvari" (lit. she who sustains with the herb).

TO

THE HONOURABLE

MAHARAJA SIR MANINDRA CHANDRA

NANDY, K.C.I.E.,

OF COSSIMBAZAR

WHOSE NAME IS A HOUSEHOLD WORD IN BENGAL

FOR HIS MATCHLESS MUNIFICENCE IN THE

CAUSE OF EDUCATIONAL AND INDUSTRIAL

DEVELOPMENT OF HIS COUNTRY

# INTRODUCTION

PROFESSOR MUKERJEE honours me by his wish that I should write the introduction to his volume ; and I willingly attempt this. As an eager reader, and even an old reviewer of books on India, I can honestly invite others to follow him through the villages and fields, and into the homes and workshops to which he leads us, and of which he has so much to tell. Since the appearance of " The Web of Indian Life," by his and my old friend Sister Nivedita, I know of no such further and fuller volume, again sympathetic and suggestive and now detailed and practical, even reconstructive.

The situation of the village is one of the profoundest interest, and this to Indian and European alike, since the whole modern transition is involved within it. There—the ancient village community with its family and caste systems, and with the agriculture, the crafts and arts, the education and religion also, which are congruent with these. Here—attacking and disintegrating it, more and more year by year—the Industrial Revolution. Upon this process of breaking-down of the antique social order, which in Western countries we have earlier and thus more completely expressed, there are two familiar and contrasted types of comment, the regretful and the triumphant respectively. Of

the first, Goldsmith's "Deserted Village" is the classic dirge, as Carlyle's, Ruskin's, and Morris's impassioned diatribes are the later expression; but for most ears all these alike have been drowned by the tumult of the manufacturing or the financial city, by the mingled thunder of steam-engine, rail, and loom, and, above all, by the economists' and politicians' inspiring battle-cry of "Progress." What, then, can we expect from the Indian student, insistently educated as he is in both these schools—in experience by the first, and at college by the second—but that he should accept the process, as Westerns usually do, as "at any rate inevitable," and so adjust his life to win such position or profit as may be practicable under the circumstances? Not so, however, our author; here is the main point and purport of his book.

The rural conditions of India, its village life and institutions, have been described by many authors and with a recognition of their antique worth which no one now-a-days will seriously deny. Similarly for the associated industries, though here in this book with a real beginning of full and monographic surveys. The struggle for existence in which the village now finds itself is likewise admitted on all hands, though it is much to have it here reviewed afresh by an essentially first-hand observer. But the main thesis of this book, to which all else leads up—its distinctive contribution, by which it has to fall or stand—is that the struggle is not, at any rate need not be, that of despairing age, vainly striving with broken sword and feeble shield, against overpowering numbers, modern weapons, limitless resources, ruthless strategy, and

thus inexorable fate. With cheering faith in the survival-capacity of his old village, as well as in the value of its villagers,—a faith based on knowledge—our author presages for it and them a very different future; and he supports this forecast not merely by general economic arguments of vigour, but by definite and practical proposals as well. For him age is not necessarily senescence, still less senility; its long-sought secret of rejuvenescence is again coming within grasp; why, then, may not renewing and readaptive youth—even now, far though the struggle has gone—seize his antagonist's best weapons and successfully turn them to the defence of village and home?

"Fair hopes of a young writer," the elderly reviewers, if in good temper, may patronisingly say. Many of us have felt the like, and this forty years ago and more. But we saw Ruskin forced to retire to his hillside in sadness, and Morris to retreat to his library, his printing-press; and so more or less with the other romantics, "beautiful ineffectual angels" all. The foremost living poet of the West, Emile Verhaeren, has faced the modern inferno of hideously spreading tentacular cities, into which their impoverished and hallucinated country-sides more or less hopelessly fall. And now that war is bringing poverty, and its stern financial masters, so plainly within view, what rural life can hope to escape from the clamant summons of the manufacturing towns? From the standardized semi-slums of Western progress, the corresponding coolie-lines or human warehouse-chawls of Indian progress, who will deliver these simple country people who daily crowd the ingoing

trains? What hope from the most benevolent of governments, save of inspection and inspectors? or from progressive social theorists, like Mr. Wells? or from his antagonists, the Fabian Society for choice, save more machinery and more inspectors still?

Despite all this, and even here in Calcutta—where the industrial process, with its coarsest material of jute and its attendant evils accordingly, with its planless muddle of docks and railways and canals, is rising to a devastating and destructive force fully recalling the unrestrained and unmoralized heyday of the generations of corresponding initiative of Britain—Professor Mukerjee is resolved to fight his battle, and not only to defend but renew his hard-beset village home. It is well he should, for, in eager thought no less than in strenuous deed, youth must to-day, as of old, "ride forth to war with all his banners flowing." But with what hope for him, or for those he seeks to inspire or lead?

Despite ample witness of failures and disappointments in social and educational endeavours, and long, indeed well-nigh incessant, experience of such discouragement as well, I yet venture to maintain that his main thesis is sound. The village can be made to survive. Though a Ruskin may fail, a Plunkett may and does succeed. In Denmark, above all, Bishop Gruntwig has succeeded.

Education has not said its last word, but only repeated earlier and mistaken ones, in preparing the present overplus of would-be clerks and officials, of barristers and politicians, with disappointments, embitterments, and social dangers accordingly. Similarly for social organization;

even with its soldiers and munition-makers by the million to-day, massed as for the creation of railways and factories a generation and more ago. France, which has so largely led the world, and for evil as well as good, into militarism, officialism, and examinationalism alike, is now peculiarly disillusioned with all three; and she is setting towards rural and technical efficiency; other countries are following suit; and the turn of India will not be much longer delayed. That when the war is over young Europe will wish for and seek more constructive work, more manly, healthy life than our present cities offer, is being generally realized. The generation succeeding that of our young soldiers is already characterized by its boy scouts, with their joyous return to nature and labour. Moreover, to the boy scout is already being added the boy citizen. Then why not also the boy villager, who more naturally includes them both? And this similarly (or first?) for girls.

Beyond all such observations or forecasts of social changes in detail, there is a larger view with which we may conclude, that of a better understanding of the Industrial Age. Of this every economist speaks, but none has yet adequately analyzed it. Every one has heard of the Stone Age; but no ordinarily informed person any longer speaks of this as one period but always clearly distinguishes it into two ages, rude and fine, "Paleolithic" and "Neolithic," the Old Stone Age and the New. In the earlier of these periods we see man still fresh from his emergence above the brute, grasping a rudely chipped flint and mastering the secret of fire. In the second we have man rising beyond the rude

hunting stage, and founding, in all its essentials, our present civilization. For he is creating not only finished and polished tools, with corresponding finer workmanship, but has established agriculture and cattle-keeping, with all that these imply—of the progress of intelligence, the status of woman, of the beginnings of institutions. He had religion too, as his burials and monuments testify, and education necessarily also.

Here, then, is the material for a present comparison; here the clue to a corresponding analysis of the Industrial or Technic Age, into its ruder and its finer phase, as Paleotechnic and Neotechnic. The first is the age of coal and smoke, of steam factories and railway centralization, of mean housing and cheap textiles. Above all, it is the age of cheap people, slaves to all the evils of overcrowding, dirt and disease, and with rebound from these into worse evils, as of intemperance and vice: furthermore it is maintained by that substantial indifference among the directive classes, that shrinking acceptance among the educated classes, which we all know so well. This Paleotechnic phase of industry has been abstractly formulated; into mechanical science and machine-politics, into conventional "education" of examination boards, above all, into monetary economics, its appropriate mythology; and the whole has been received with superstitious and fatalistic acceptance, all the world over. Hence it is no wonder that Indians, as the smoke-cloud and ash-heap and muck-rake come from overseas to them, think of these as "Western Civilization."

Thus, as prime example, arose Paleotechnic Glasgow; for here there emerged James Watt and

Adam Smith, as veritable conqueror and law-giver of the whole Paleotechnic world for generations to come. Their little old university and cathedral townlet thus swiftly grew into a world-city, yet one fundamentally of slum, overcrowded from the depopulated villages of Highlands and Islands, of Lanarkshire and Ireland alike. The same process spread everywhere, in Birmingham and the Midlands, Lancashire, Yorkshire; each developed its Black country; and next throughout the world.

But in this very city of the Prometheus of Steam, and in the very midst of its crude industrial order, there has been going on, for two generations past, more and more of higher Promethean endeavour and accomplishment. Here worked for half a century the foremost magician of electricity, Lord Kelvin; and here young Lister began the cleansing advance which he later perfected into the antiseptic surgery of Edinburgh, and finally popularized in London, and to the world. The master-art of ship-building, surpassing even architecture in its co-ordination of crafts and sciences, has in Glasgow reached its highest perfection; and, at the same time as in Holland of old, the art of painting has had its most conspicuous development in modern Britain. From the Paleotechnic City, of coal, steam, and iron, of overcrowding, dirt, and squalor, there is thus emerging the Neotechnic City, of electricity and hygiene, of architecture and art. And with all this a new uplift of citizenship which has made its Town Council undertakings known to every municipality. So for Birmingham, for Manchester, for American cities too: everywhere throughout the Paleotechnic confusion there is beginning to appear the Neotechnic

order. So even the railway kings—at first harsh invaders like the conquering caravaneers of old, and still charging "what the traffic will bear," still careless even of their own workers, as of the towns and villages through which they pass and which they disorganize—are now showing signs of developing into socialized, even moralized, rulers; it is a change as from Mongols to Moghuls.

In this Neotechnic society, as it becomes conscious, agriculture is beginning to recover and to redeem the land from its Paleotechnic neglect and waste; and with this is arising horticulture. There also reappears the art of Town-planning; and with this Housing and Town-planning there is new hope for the related crafts and arts. In a word Western Civilization proper begins to emerge from its eclipse and to enter a fresh phase of evolution. In this renewal the heritage of the past is being recovered; its ideals are being re-stated; it may be that even its essential institutions may be renewed upon the modern spiral.

All this is of present interest in Professor Mukerjee's volume. He has much to tell of how India has conserved the essentials of her civilization, and of how, making at once the best of her old powers and resources and of her new ones, she may again hold her own in the great world and even more. Beyond this economic vision he has sociological insight. He sees that India may arouse to the value of her communitary spirit and free this from its present deteriorations, even develop it into a renewed efficiency, surpassing all mere economic co-operation; and if so that she will renew her rural and her urban world, until each again blossoms

and fruits as did the village into the city life of old. Tree and Shrine, Parishad and Panchayet, have grown before now into Temple and Council, and may again. Etho-polity, culture, and art are not the finished products, the urban monopolies, the townsman now-a-days thinks them : on the contrary, their greatest renewals have come to him from the fields ; and will again.

This line of argument is I take it essentially that of Mukerjee's book ; and I submit to him as to his readers that it may be further elaborated in detail and in theory, and increasingly applied towards practice.

PATRICK GEDDES.

THE CIVIC EXHIBITION,
TOWNHALL, CALCUTTA,
December, 1915.

# PREFACE

I HAVE attempted in the following pages to describe the main features of Indian industrial life, and to formulate a programme of Indian economic expansion. I have felt the relativity of economic life and institutions, the significance of which is unfortunately not fully understood in our country. In India we have heard and seen enough of theories as well as practices attempting to force economic systems and methods which have not been wholly successful in the West, but which are unsuited to the socio-economic traditions of the country, and to its geographical and historical conditions: and the time has come for a clear analysis of the regulative social and ethical ideals of India, to which all economic institutions must be adapted. It is true that some of these ideals themselves will be and are being changed by contact with Western industrialism, but we need to analyze the nature and extent of this change, and to judge whether this change will be permanent, or only temporary in its operation. Above all, we have to decide whether such changes will aid the expression of the Indian genius, of the particular phase of universal humanity which the Indian people are unfolding, or will tend to suppress and obliterate these. The investigations into the

various factors in Indian economics have followed the historico-comparative method, the only right method in all sociological inquiry, and will, it is hoped, as a study in comparative and applied economics, be a contribution to the science of pure economics, widening its basis, and extending the domain of its data.

An attempt has been made to examine the socio-economic data derived from caste and the joint family as well as the economico-religious ideas and institutions, and the peculiarities and special features of Indian consumption, which are still living forces in Indian economic life. I have made an inductive study of the principal cottage and village industries, which are still holding their own with a remarkable vitality and exhibit in their nature a striking though not perfect adaptation to their environment, and are ultimately sustained by the moral ideas and ideals it involves. I have also studied the machinery of exchange and distribution which this Indian industrial system has evolved, the characteristic methods of trade, transport and credit which are adapted to and subserve the productive organization. Finally, there have been indicated in a general way the lines of Indian economic advance, showing the scope of the factory, the workshop, and the cottage industry in the industrial progress of the future. Though I have touched more slightly upon Indian agriculture, which I hope to discuss in a future work, I have examined and pointed out remedies for the decline of the village, and of rural life generally, which in India is now so grave and urgent a problem for the economist and the statesman. In the concluding chapters I have sought to discover the economic

message of India breathed forth by her immemorial institutions, and its meaning and significance for the economic unrest of the modern age.

My study of Indian economic phenomena and problems has led me to certain conclusions about the economic future of India which differ in some respects from the two rival theories now current. One of these formulated by what may be called "the arts and crafts school" can find no place for large production in the scheme of Indian economic development; while the other is equally extreme in preaching the impossibility of small production. My conclusion is between the two extremes; and I am convinced that in sound economic development both large and small industries have their proper scope and importance, and one need not exclude the other.

As a student of Indian Economics, I cannot but express my obligation to Ranade's *Essays*, which is the pioneer work on the subject. The different papers submitted to the Indian Industrial Conferences are published every year and contain a mine of information on technical and industrial subjects which I have occasionally drawn upon. Sir Theodore Morison's *Industrial Organization of an Indian Province* has been specially useful to me as regards the methods of economic investigation it has followed. For the regulative conceptions of Indian economic life the brochure entitled *An Introduction to Indian Economics* of my brother, Dr. Radhakumud Mookerji, M.A., Ph. D., author of *A History of Indian Shipping*, is an admirable production; while his paper on *Lines of Indian Industrial Advance* is specially valuable for the light it throws on the proper place and importance of the

small industry in Indian economic life. The monographs published by Government in different provinces on village industries and handicrafts, though mainly descriptive in their character, have been very useful: they are, however, unfortunately too few in number.

But the main source of my information is my own first-hand study and actual investigation on the spot of the cottage and village industries and the systems of trade, credit and transport. I have had to go from village to village in a laborious search for facts and details regarding rural life and labour which have hardly been recorded by any previous observation. The difficulties one has to experience in collecting such data from our artisan and trading classes are characteristic. One has to fight not only their ignorance and superstitions, but also their fears and suspicions. The real sources of information are accessible only to sympathy and fellowship with simple labour and life, in its distress and sufferings, its aims and aspirations.

For some of these data I am indebted to artisans and labourers who are taught in my night schools, rural and urban, and also to agriculturists and traders who are members of Co-operative Credit Societies in villages established by me as Honorary Organizer of Co-operative Societies in the district of Murshidabad. I have been able to collect, after Engels' method, the statistics of consumption partly through them as well as through friends and pupils of Krishnath College, Berhampore, who took the trouble of filling up the tables I prepared for this purpose: and to them my best thanks are due.

I owe a deep debt of gratitude to Dr. Brajendra

Nath Seal, M.A., Ph.D., King George V. Professor of Philosophy in the Calcutta University, for his invaluable suggestions given from time to time, and his deep interest in my work. My acknowledgments are also due to Dr. Radhakumud Mookerji, M.A., Ph.D., and Professor Benoy Kumar Sarkar, M.A., author of the *Science of Education*, for revision of the book, and assistance rendered by them in various ways; as also to the writer of the introduction.

Chapters I. and II., Book III., and Chapter IX., Book IV., were approved by the Calcutta University for the Premchand Roychand Research Studentship. Some of the other chapters were originally submitted as papers to the Indian Industrial Conference, and the Provincial Co-operative Conference, Bengal. My thanks are due to those by whose kind permission I am reproducing them here. I should also express my grateful acknowledgments to the Editors of the *Modern Review*, the *Indian Review*, the *Hindusthan Review*, the *Modern World*, the *Wealth of India*, the *Dacca Review*, the *Vedic Magazine and Gurukula Samachar*, the *Collegian*, and the *Calcutta University Magazine* for the courtesy of their permission to reproduce different portions of the work which originally appeared in these journals. My special thanks are due to Mr. Ramananda Chatterji, M.A., of the *Modern Review*, for the greater portion of this work appeared in his journal.

RADHAKAMAL MUKERJEE.

BERHAMPORE, MURSHIDABAD,
March, 1914.

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# BOOK I

## *THE SOCIAL ENVIRONMENT*

# CHAPTER I

## THE ECONOMIC TRANSFORMATION OF RURAL INDIA

INDIA is now in the throes of a great economic revolution. A contrast between city life and village life would show the fundamental character of this revolution. Rural India carries on the production, distribution, and consumption of wealth in a manner which is strikingly different from that of city India. The structure of rural society has hitherto rested, and is still resting to a certain extent on status, while the cities are rapidly coming under the sway of competition. Indeed, the economic ideas of the city are not only far removed, but in some cases are actually antagonistic to those of the village. The village is still almost self-sufficing, and is in itself an economic unit. The village agriculturist grows all the food necessary for the inhabitants of the village. The smith makes the ploughshares for the cultivator, and the few iron utensils required for the household. He supplies these to the people, but does not get money in return. He is recompensed by mutual services from his fellow villagers. The potter supplies him with pots, the weaver with cloth, and the oilman with oil. From the cultivator each of these artisans receives his traditional share of grain. Thus almost all the economic

transactions are carried on without the use of money. To the villagers money is only a store of value, not a medium of exchange. When they happen to be rich in money, they hoard it either in coins or make ornaments made of gold and silver.

The village agriculturist possesses little capital. He lives from hand to mouth. The Banya supplies the cultivator with seeds, and charges an enormous interest.[1] But the cultivator pays the interest ungrudgingly; though he stoops under the heavy burden, he does not improve his position. There is no desire for a better, more comfortable living, both among the cultivators as well as among the artisans. The artisans follow their hereditary occupations. There is no competition, no stimulus for improvement, no change in customary wages. The industries are stereotyped; the apprentice only tries to imitate his master, and rarely thinks of introducing new implements or new methods of manufacture. Thus the village communities are the most complete and the most contented in the world. Within their self-sufficing confines trade is no vulgar source of profit for which men scheme and strive, but a calling, often a holy calling, handed down from father to son through generations, each with its own unchanging ideals, its zealously-guarded crafts.

But the village life is being transformed. The city sends to the village Manchester cloths, and

[1] He is not altogether so despicable as many think him to be, for without his assistance agricultural operations cannot be carried on for a day in the village. The people are so poor that "the Banya has often not only to forego the repayment of the loan for the time being, but even to feed his debtors in the bargain, in order to keep alive the hope of being paid in future."

these are replacing the cloths woven by its weavers. Not only weavers, but also other artisans are losing their occupations and turning to agriculture. The cheap kerosene oil from Baku or New York threatens the oilman's existence. Brass and copper which have been used for vessels from time immemorial are threatened by cheap enamelled ironware imported from Europe. The village sugar-cane is also in danger on account of the competition of imported sugar, which is sold at a very low price. The manufacture of sugar from *gur* (molasses) tends to become unremunerative. The demand for *gur* also falls off when the price of sugar is brought down by competition. There is also *pari passu* a transformation of the tastes of the consumers. They abandon *gur* for crystal sugar. Home-woven cloths are now replaced by manufactured cloths for being too coarse. All local industries are attacked, and many have been destroyed. Villages that for centuries followed customary practices are brought into contact with the world's market all on a sudden. For steamship and railways which have established the connection have been built in so short an interval as hardly to allow breathing time to the village which slumbered so long under the dominion of custom. Thus the sudden introduction of competition into an economic unit which had from time immemorial followed custom has wrought a mighty change.

New economic ideas have now begun to influence the minds of the villagers. In some of the villages the weavers and the blacksmiths have no doubt been compelled to leave their occupations on account of foreign competition, but more men are

leaving their hereditary occupations *of their own accord.* All Brahmins are not priests now. Many, indeed, live according to the old ideals, and view the temptations and vices of the West in "silent, deep disdain." But a few of them who have felt the impulse of a new life have gone to the cities. Those who are intelligent become lawyers or government servants, and those who fail in the competition become petty clerks in railway or mercantile offices. The middle classes also leave their village and get scattered all over the country to earn a living. A writer[1] thus laments the decline of villages in Bengal: "In days long gone by our villages vied with each other as to which had the best sanskrit Pandits and the best *Tols*, which had the largest number of Durga Pujas and where the largest number of people of all castes were fed. The days are gone by when each village was proud of the products of its looms, of the hoes made by its blacksmiths, its *jatras*, and its *Baroari poojahs.* But where are those things now? Echo answers where? At day time you will find large and expensive buildings either wholly unoccupied or in the occupation of a few old women. Is there a pestilence in the village? Ah no! for you will see the houses and huts of the peasantry full to overcrowding. It is the houses of the middle-class Bhadralokes that are wholly or partly unoccupied and that gives to the whole village the look of a deserted village." Not only the middle class but the field labourers also have found their ancestral occupations not sufficiently paying and have felt the need of moving to other places. The Government public works, the

[1] *The Bengalee*, August 2, 1901.

factories, the tea, indigo, and coffee plantations, the mining operations, as well as the facilities for foreign emigration all tend to shake the old immobility of labour. As the *Imperial Gazetteer* writes, "A comparison of census returns of 1891 and 1901 shows that a considerable landless class is developing which involves economic danger, because the increase has been most marked in districts where the rural population is already congested or in provinces in which there is a special liability to periodic famines. The ordinary agricultural labourers are employed on the land only during the busy seasons of the year and in slack times a few are attracted to large trade-centres for temporary work."[1] The attraction to towns and other trade centres increases as trade industries develop and this movement is accelerated in famine years. "Agricultural labourers migrate from Bengal and the Central Provinces to Assam, from the United Provinces to Bengal, from Madras and Chittagong to Burmah; and outside India to Ceylon, Mauritius, South Africa, British Guiana, and other colonies in search of agricultural and other employment." In Madras, where emigration has been comparatively easy, there is almost a chronic scarcity of labour. In some districts the agricultural operations have been much impeded and at times endangered by the constant and sudden desertion of agricultural labourers, who, after entering into contract to cultivate the lands on certain conditions, emigrate to foreign parts without the slightest notice to their employers.[2]

[1] Vol. iii., p. 2.

[2] G. S. Iyer, "Some Economic Aspects of British Rule in India," p. 207.

There are also other great far-reaching effects of this migration of labour. There has been engendered an aversion from the parent plough and the workshop. The demand for labour, again, has withdrawn the most valuable and potential elements from society—the flower of the agricultural population and rural artisans—so that not only agriculture but the handicrafts also suffer. The production of cereals has diminished a great deal while the foreign exports have a continuous tendency to increase. The village market is no longer isolated; the demand for food in any part of India tends also to affect it. The population has increased and the standard of living has also become higher. The coolie emigrants or the middle class who return to the villages bring with them good savings and live on better fare than they were content with before they emigrated. The increased demand for food is, however, unaccompanied by an increased out-turn of agricultural produce. The price of food-stuffs has consequently risen by 32 per cent. The exodus to towns is still going on at an alarming rate, the towns still continue to offer easy employment to the middle classes and labourers and ready markets for the products of the village artisans. They offer high material prospects to the ambitious, and in general provide all the mechanical facilities and pleasures of life to satisfy those whose standard of life has suddenly been raised. The landlords pass their lives amid the luxuries of the towns, and lose touch with their tenants. The sturdy cultivators become domestic servants, and the middle-class independent *bhadralokes* become clerks in mercantile offices and Government

establishments. Thus the villages are all deserted and left as wastes and become prey to malaria. Paternal estates, tanks and orchards which have been handed down from generation to generation are left to decay. The cattle gradually deteriorate in quality. Milk and dairy produce become gradually scarce, and pisciculture and horticulture become unknown. The movement of the population from the village to the city is in fact not only working a complete revolution in the habits and ideals of our people, but its economic consequences are far more serious than are ordinarily supposed. It has made our middle class helplessly subservient to employment and service, and has also killed the independence of our peasant proprietor. It has jeopardized our food supply, and is fraught with the gravest peril not only to our handicrafts but also to our national industry, agriculture.

Another important change brought about in our rural industrial life is the introduction of money-economy. This has been a slow process, and brought about by various causes. The railways have destroyed the economic self-sufficiency of the village. They have created wants which were unknown before. The commodities which are thus introduced into the social economy of the village cannot be made by village artisans. Thus there grows a class of middle-men and intermediaries. At first they are peripatetic, like the Kabulis and Marwaris, who come from up-country. They will sell the commodities only for money in cash, for they cannot stay in the village waiting for a quantity of grain at harvest time. Thus these itinerant dealers who come to the village occasionally with

their assortment of imported goods encourage the system of money-economy. There are also other causes of the introduction of money. The villagers who go to the cities and other trade centres for service and employment are paid in kind and not in money. When they return to the village, they come with ready money in their hands. Again, the steady and continued rise in prices of the necessities of life which has been a characteristic feature of the recent economic history of the country has put the cultivating classes in possession of an amount of ready money which they never possessed before. In those tracts of the country especially where raw materials for exports, such as jute, cotton, oil-seeds, are grown, the agents of the European exporting firms offer cash advances to the peasants, and make them more or less independent of the village money-lenders, who lend seeds and recover their advances in kind, and who are thus instrumental in conserving barter-economy. The substitution of the *gumustha* or clerk of the exporting firm for the village mahajan, indeed, marks a stage in the transition from barter-economy to money-economy. With these economic causes is combined an administrative necessity. The system of collecting the revenue in cash is perhaps the most powerful cause of the substitution of money for barter in Indian villages.

# CHAPTER II

## CONSERVATIVE ELEMENTS IN THE ECONOMIC ORDER

THUS there have been in operation several forces which tend to profoundly affect the old Indian social economy. But the new economic ideas and practices which are being introduced into the social organization of India have not as yet been able to produce their full effects.

Let us first study some facts about the rural exodus which has been considered as one of the important phases of the social transformation. In spite of the attraction to towns the people as a mass still live in villages. Of India more than any other country it can be said that the nation lives in the cottage. Nearly 85 per cent. of the total population live in the country. There are only 2150 towns in the whole of India possessing not less than 5000 persons. Even these towns are aggregations of villages not greatly differing from single villages. There are 190 towns in Bengal which contain only 5 per cent. of the population. The villages make up the remaining ninety-five. The number of villages in Bengal is about 203,658, counting each so-called town as only an overgrown village. Of these 165,305 contain under 2000 souls, and 3066 over 3000. Migration or emigration has worked hitherto on such a small scale in India as a whole that little

relief has been given either to congested or to sparsely populated districts.[1] The Indian peasant clings to the neighbourhood of his own home, however much it may be over-crowded. Again, "the movement between different parts of India is usually of a temporary nature, and does not involve a permanent change in residence." Statistics show that over 90 per cent. of the inhabitants of every district were born in that district, 6 per cent. were born in the districts immediately adjoining it, and only 3 per cent. come from more distant places. Thus the self-sufficing isolated village is still the real unit of the Indian social life. The number of landless labourers who are employed in mills and factories is exceedingly small as compared with the total industrial population of our country. In the Punjab, where a great deal of land has been brought under canal irrigation within recent years, and has been colonized by people from thickly inhabited tracts, the census returns show only 360,000 labourers and more than 10,000,000 landowners and tenants. Large industries have been established, but the supply of labour has been found to be inadequate. The tea-gardens of Assam are worked, though less and less so as time goes on, by coolies recruited under a system of State-aided and State-supervised emigration under the Inland Emigration Acts. The stream of emigrant coolies that used to be poured out to the British colonies under the system of State-aided emigration is now almost counter-balanced by the coolies who return to India.[2] The factories are suffering from the inadequacy in

[1] *Imperial Gazetteer*, vol. iii., p. 2.
[2] See G. S. Iyer's "Economic Aspects of British Rule in India."

the supply of labour. The deficiency has seriously restricted their productive capacity.[1] The fact is that the Indian labourer is quite reluctant to leave his native village. When, however, he does leave his village to work in the factories, he does not leave it for good, but he tries to return as soon as he can. As the Report of Factory Commission, 1908, says, "The Indian factory hand is primarily an agriculturist. His *real home is in his native village, not in the city* where he works. He leaves both wife and children behind him when he emigrates to the factory, and regularly returns to them to look after his family affairs and to rest from his labours. More than this, he can always find work in his village if he gets tired of the factory."

With regard to the introduction of money-economy, another phase of the economic transition, it should be remembered that in many villages of modern India grain is still playing the part of money. The tenants are still paying the landlord in crop and not in money. The labourer in many villages is satisfied with the customary remuneration in grain. There can still be found many village

[1] "There is at present one very serious obstacle to the rapid development of the factory system. Labour is very difficult to secure. The Indian labourer does not readily adapt himself to new methcds. In factories, in hand-loom workshops and in coal-mines there is the same complaint—that the wages are higher than can be earned anywhere else, and yet there is a strange unwillingness to be tempted by them. In order to induce an Indian workman to enter a factory, he has to be allowed a freedom from discipline which softens the contrast with his older methods of work" (Prof. Lees Smith, "India and Tariff Problem," p. 24). Again, "At the Ranigunge coal-mine the labourers will not, as a rule, work more than half the month. Though they could easily cut two tubs a day they are usually content with cutting one, and they take frequent holidays" (Report of the Chief Inspector of Mines, 1905).

markets where a large number of purchases and sales is carried on without a single coin passing between the buyer and the seller. Especially in those parts of India where the influence of the village community is strong, grain transactions are the general rule. The labourers and artisans are all employed by the body of villagers and receive their wages in kind. These wages are altered with great difficulty. A remarkable proof of the fact that villages have not adopted money-economy is the disparity between prices in the towns and those in villages. Prices in villages still continue to remain more or less unaffected by fluctuations in the towns. Thus the middle-men and intermediaries often gain a good deal out of purchases in villages and sales for export. The ignorance of the villagers is sometimes regarded as the cause of the disparity of price-levels, but any one closely examining the village economy will find that it is not the ignorance of the villagers but the lack of connection between money prices and commodities in the village that accounts for the differences of prices in town and village.

Thus the Indian village has not universally adopted the economic methods and practices of the West. It has, on the other hand, shown a rigid adherence to her own organization. A study in this connection of the important socio-economic institutions of our country like the joint family and caste, and also of the standard of consumption of the average villager, which have tended to conserve the economic order, and an examination how far western ideas and ideals have tended to modify them, will therefore be very interesting and useful.

# CHAPTER III

## THE FAMILY AS THE ECONOMIC UNIT

THE Hindu family, "joint in food, worship and estate," is the economic unit of Hindu society. The family consists of the man and woman, their sons, grandsons, and great grandsons, who live in peace and harmony and share the common chest or purse.[1] Founded on the virtues of affection and self-control, this system tends to develop a spirit of self-sacrifice, and mutual control and dependence, which are quite opposed to the competitive individualistic spirit, the key-note of modern industrialism. Indeed, the sentiment which it fostered and the economic effects it produced have led to certain fundamental differences characteristic of our industrial life clearly distinguishing it from that of Europe and America. Thus, while in the West it is the individual's own scale of wants, his standard of comforts and of activities which regulates the growth of population, in India the family mode of enjoyment or standard of life is the main factor. Marriage in Hindu society is compulsory at a particular age, so the

[1] "The Hindu family is a group of individuals related to one another by their descent from a common ancestor within seven generations in the descending line" (Bhattacharjee, "The Law relating to the Joint-Family"). A well-known saying ascribes happiness in heaven to one who lives to see seven generations gathered under his roof.

fluctuations in prices of the crops have no such effects as in Europe, on the number of marriages. In Europe the check to the increase of population is competition, the struggle for food and its law, "if a man will not work, neither shall he eat," enforced upon the individual by society. In India the rigour of the law is mitigated in its operation by the family. The family protects the young wife, the helpless orphan or the decrepit grandfather. Thus state medical aid or old age pensions become unnecessary. The members of the family are assured maintenance not only for themselves but for as many children as they choose to bring into the world from the property ordained to be the hereditary source of maintenance for all. There are also theoretical restraints on the birth-rate which serve to prevent excess of population. These restraints are not economic but moral and religious, and are enforced by the family. Such restraints, however, are not now operating to any great extent. As in the case among the lower grades of society in England, the great bulk of the population of our country has no prudential checks. It seems that when the standard of comforts and of activities is low, the higher brain centres are inactive and the reproductive organs vigorous. The absence of higher intellectual activities which inhibit reproduction is also accompanied by enfeebled vitality, due to poverty and economic stress, and such enfeebled vitality to a great extent encourages instead of checking the birth-rate. The probable explanation according to the biologist is that an inadequate nutrition of the somatic tissues, within certain limits, promotes the activities of the reproductive organs. Thus the population increases,

and this increase leads to poverty, which again promotes a further increase of the population; and it is clear how the effects are intensified as this state of things goes on cumulatively until the process of degeneracy reaches a certain limit beyond which the stock seriously deteriorates. To this, if we add the consideration that Hindu society is dominated by the ideal of the family and paternal affection, we can easily see what results follow in our country. Indeed, the notion among the Hindus that it is the duty of each and every one of society to bring into the world at least one son, without whom not only he but all his forefathers will be without food and water in the next world, though appropriate to a race in its early stage of evolution, has now become unsuitable under present economic conditions. To the Hindu lawgivers family increase was associated with prosperity, for the Hindus in very early times when the codes were drawn up were surrounded by inimical tribes, most of whom, again, being Dravidians were matriarchal societies. Thus even now there is the strong prejudice in favour of the birth of sons, which, however, in face of the present relation of the population to the food supply is accompanied by baleful economic consequences. The population of India has increased threefold in the last century. This rate of increase, though small as compared to countries in Europe and America, is, indeed, high if we consider the agricultural and industrial conditions of our country, so that the only checks which now seem to operate are brought about by the very fact of over-population, viz., pestilence and famine. The want of staying as well as of resisting power in the physique,

which is due to inadequate nourishment or sustenance, consequent on over-population, is responsible to a great extent for the prevalence of malaria, plague, consumption and other diseases which are now fast spreading in the country.

But though the ideal of the joint-stock family has been unable to exercise its moral influence with regard to the population question, its ennobling effects on our socio-economic life, through its conception of the marriage relation, can hardly be over-estimated. In India marriage is a sacrament and its supreme object is to perpetuate a family, a patrimony and a faith. The consent of the family is necessary. Individual likes and dislikes are not of much importance; for marriage is not a means of one's individual pleasure or advantage, but the duty of transmitting an unimpaired estate and of maintaining the integrity of a family is the supreme consideration. And the family in maintaining a strong authority in its integrity does not allow economic considerations to stand in the way of a marriage. A man need not be very wealthy before marrying, for the family will support his wife and children, and the girl in the family organization is not left to shift for herself in the matrimonial market.[1] Her father arranges the marriage and she finds assured maintenance provided for her as soon as she leaves her parents for her husband's family on reaching maturity. Such a family presents a striking contrast with the unstable organization of

[1] "A member, entitled to get the least share on partition, may by reason of having a large family of his own to support consume during jointness the large portion of the proceeds of joint property, without being liable to be called upon to account for the excess of consumption at the time of partition" (G. Sarkar's "Hindu Law," p. 215).

the romantic family of Europe and America, which offers little resistance to the disintegrating influence of morbid emotion and insane ambition. "When the duty of maintaining a family tradition is no longer acknowledged, when religion has ceased to be an element in domestic life, when children have become unwelcome, and marriage is viewed as a convenience or a pleasure, legal obstacles to its dissolution will not long be tolerated by a community of irritable, sentimental, and egoistic men and women who have found life disappointing."[1] Thus divorces have been rapidly multiplying in Europe and America. To add to the family instability, the woman of the West is becoming more and more economically independent. Not supported by her own family and unable to find a husband or deserted by him she has to earn her own living. Thrown into the hard struggle and competition for wealth, she gradually loses the idealism that is natural to her. She asks for votes in order to shield herself from the individualistic economic system regulated in the interests of men, but the feverish excitement, the constant fever and fret of modern industrialism, gradually renders her unfit for motherhood—the essential and incontestable right of every normal woman.

Our family organization enjoining the man that marriage is a family duty necessary for the perpetuation of family culture and a bond which is indissoluble in the interests of the children, and protecting the woman from being dragged into the mire of industrial competition and struggle for

[1] See Giddings, "Principles of Sociology," chapter on the Demogenic Evolution.

living, has contributed in no small degree to a high standard of morality and real contentment of the people.

The unity and stability of our joint-stock family have, however, been threatened by the growth of individualistic tendencies due to the recent changes of economic conditions. According to Professor Nicholson one of the most characteristic features of "economic progress" has been the disintegration of the family; freedom of the individual has displaced the bonds of blood relationship, at any rate to a considerable extent. New organs for the accumulation of capital have been invented, individual earnings need no longer be invested in family land. The desire for personal liberty has made necessary a change in the idea of the family as the social organ of property.

Perhaps the earliest indication of this change in our country was the differentiation between patrimony and self-acquired property effected before the age of Manu's code. The rights of self-acquired property thus came to differ essentially from those to patrimony in Manu's system. The Mitakshara emphasized this distinction, no gift or sale of the family property could be made, but the self-acquired property could be given to any one. The family property was held in sacred trust, it was inalienable, for "they who are born and they who are yet unborn require the means of support." A member of the joint family acquires a right to the joint property on becoming a member by birth, adoption or marriage. This is the theory of *Samudaya,* that of the whole existing in and through the parts, the whole being potential in each part. But the

individualistic movement into which the country was plunged with the spread of Buddhism wrought a fundamental change in the conception of property rights. The theory of *Samudaya* was abandoned. The whole was now conceived as merely an aggregate of the parts, and the parts alone were now real. Thus partition rights were now greatly emphasized. Not only self-acquired property but the patrimony as well could be alienated by the *Karta*, or head of the family. The patrimony was dissipated and the joint family system thus threatened. To check the excesses of individualism, Jimutbahana, the reputed author of the *Dayabhaga* System in Bengal, interpreted the doctrine of *Samudaya* on new lines. Both the whole and the parts existed, but their relation was different from that in Mitakshara. The whole, again, was not potential in the part, hence legally the patrimony could be alienated, but the alienation was restricted by moral obligation.[1] A change in the system of law was thus made. The new code formulated that the sons had no right to the ancestral property during the father's lifetime, deprived them of the right of enforcing partition against the father's will, and further provided two shares for the father in case he made a partition during his life.

[1] According to the *Dayabhaga* a father is incompetent to alienate a movable property, excepting a small portion, provided that such alienation is not incompatible with the maintenance of the family. Then, the author of the *Dayabhaga* maintains that a person is legally competent to alienate, as for the legal necessity affecting the family when the property is ancestral, and according to his pleasure when it is self-acquired, the ancient texts requiring consent of the coparceners in the former case and of the sons in the latter, should be held to impose only a moral obligation, but not to invalidate an alienation actually made without such consent; because the nature of the law cannot be changed by a hundred such texts.

To prevent injustice to the sons, he at the same time deprived the father of the power of capriciously and whimsically aliènating the ancestral property or of making unequal division of it or of taking more than a double share on partition. The modern courts of justice, however, declare that there cannot be a real joint-family consisting of a father and sons during the father's lifetime inasmuch as joint property, which is the essence of the conception of joint-family, would be wanting to make them joint. Nor can there be, according to the modern view, a real partition during the father's life; for it must mean neither more nor less than a gift of the property by the father to his sons. Thus "the position of affairs has become anomalous owing to the divergence between actual practice and legal theory," and the view taken by the courts making it almost impossible that there should be a joint-family of father and sons, unless there is joint property acquired otherwise than by inheritance, threatens the existence of the joint-family system in Bengal. Still joint families consisting of father and son do exist in Bengal, and the natural love of a father for his sons prevents the evil consequences that might follow from an application of the court rulings.

It is not, indeed, the High Court decisions, but the economic stress and consequent growth of individualistic spirit in our country that have been slowly sapping the roots of the joint-family organization. A more complex economic life has necessitated a change. It is possible that the joint-family system may come to an end. But let us not accept the family system of Europe as the ideal. To gratify individual desires, feelings and preferences,

the system of the west has sacrificed family patrimony and tradition, and in its passion to develop the personality of the individual has often shown an impatience of the restraints imposed by a genuine consideration of the well-being and interests of children.

The system of our country, indeed, disciplined the people in a lofty family ideal, but it now tends to lose its efficacy and moral significance. It has engendered an unmistakable affection in the man and woman and habituated them to look upon the marriage based on such affection as sacred and indissoluble. It has helped the maintenance of a respectable and happy home and inculcating a noble ideal of social service, infused strength and vigour into the life of society. Society in India, indeed, draws its very inspiration from the joint-family system, being dominated by the manifold personal ties which bind one to it, viz., the relation of the son to the parents, of the husband to the wife, of the householder to the guest, of the disciple to the *guru*, of the servant to the master. Thus the ideals of Hindu manhood that have been handed down from the remote past through our epics and our *puranas*, our folk-songs and rustic tales, are all drawn from the home and joint-family life. The heroes of the Ramayana and of the Mahabharata typify the supreme examples of filial obedience. Laksmana embodies the devotion to the brother, Hanuman the reverence for the master, Eklabya the implicit faith in the guru, and Raja Sibi the veneration for the guest, while the sacrifice of Sita, Sabitri, Saibya, and Damayanti, as well as of Behula and Fullara, represents the supreme ideal of Indian

womanhood. Our god and goddess are Siva and Sati, the ideal couple, whose selfless lives are consecrated and illumined by their sufferings for each other's sake. As it has been well remarked, "the home in India was the great sanctuary where sacrifices and martyrdoms were to be undergone for the sake of those sacred ties which bind one to it; and this would, according to the notion of the Hindus, infallibly lead him to a realization of the supreme duty which a man owes to God—culminating in a glorious renunciation of home for the good of the soul and of the world. Indeed, in a place where a joint and undivided family-system required a man to live and eat together with all his near kinsmen, it would be impossible to live in harmony without elevating domestic duties into the highest virtues. Hence no other nation has given so high a value to domestic duties identifying them so closely with spiritual." But while it develops the gentle qualities by sanctifying domestic duties, our system has, on the other hand, promoted stagnation and idleness, and thus sacrificing economic progress has stood in the way of the development and the perpetuation of that rational personality, which is the supreme end for which the family exists. In the joint-family no obligation exists on any one member to stir a finger if one does not feel so disposed, either for his own benefit or for that of the family; if he does so, he gains thereby no advantage; if he does not do so, he incurs no responsibility, nor is any member restricted to the share which he is to enjoy prior to the division. A member of the joint-family has only a right to demand that a share of the existing family property should be separated

and given to him; and so long as the family union remains unmodified, the enjoyment of the family property is in strictest sense common. Though social opinion and domestic influence—the ladies exert it to no small extent—tend to check cases of idleness, these are not by any means rare. When the members of the family lose their sense of responsibility, and sitting idly at home and begetting children, continue to share in the common property, the family gradually becomes impoverished. The home, instead of being the nurse of a lofty idealism, now becomes a source of endless worry and distraction. The bickerings of women and the long-standing enmity of men baffle the energies of the more industrious and intelligent. Landed property, held in co-partnery, cannot be improved because of the quarrels among the members. Litigation involving heavy expenditure becomes rife, and whole families are thus ruined and become extinct. The picture of such a home has been thus given by Mr. N. Ghosh: "The Hindu home is a source of endless distraction and embarrassment. It has crushed many a spark of native fire, buried many a noble project. Poverty is not the worst of its destructive agencies, but the agitation of feeling caused by the living together of a large number of men and women, very few of whom are in sympathy with each other, and almost every one of whom has some grievance as against the rest, cannot fail to deaden energies. The quarrels of women, the deep-seated malice of men, the "mighty contrasts" which "rise from trivial things," give no rest to the unfortunate inmate of the Hindu home. The fight rages sometimes about a point of dignity, sometimes about

money, sometimes about questions of authority and obedience. Occasionally, of course, there is intermission of above hostilities; but no more peaceful condition is ordinarily reached than that of armed neutrality." The picture has certainly been overdrawn, but unfortunately there is something in the Hindu home which makes such a drawing possible. These quarrels become more frequent as poverty and the cost of living increase, and as the individualistic ideal of the West exercises its disintegrating influence on the family till, under the stress and exigencies of modern life, the Hindu comes to disregard his old joint system altogether, refusing to be bound by obligation beyond the circle of his nearest kith and kin.

Thus actuated though it is by a noble idealism, it is being endangered by the stress and struggle of the civilized life of the present day. Life has now become harder as the standard of living has also become much higher, and individual earnings have now come to be devoted to satisfy individual wants instead of being shared equally among distant family relations.

Neither India nor Europe and America, but something above them will give us the ideal family. The ideal family regards duty as the most sacred thing in the world. It has a high sense of the privilege of transmitting its qualities and its culture to the child. It gives the child right training, disciplines him in the robust virtues of self-control and self-sacrifice. Thus it consciously selects, cultivates, and transmits the fairer fruits of a rational civilization. The child, as the heir of the past and the promise of the future, represents humanity,

and the ideal family therefore serves humanity in serving the child. By such social service alone, the healthy development of individual personality in man as well as woman is attained.

The evil effects of our joint-family system have been intensified by our systems of inheritance and succession. In the joint-stock family, while there is no room for bequest, the right of inheritance is fundamental. But our law of succession has a very pernicious influence on our economic life. The land is divided into many small estates. The small landowners have little capital to make permanent improvements of their estates. Usually the security of tenure is less in small than in large estates, and the relations of landlord and tenant are worse. Again, with regard to property other than land, Mr. Dadabhay has remarked that the family capital, as soon as it reaches the point when it can be increased with the greatest advantage, undergoes a process of disintegration, which reduces the participators to actual poverty, or at least throws them back to the original position, when they have to start accumulation anew. This process goes on see-saw fashion, to the detriment of industry. Nothing is more certain in finance than that reduplication and growth of capital progress successfully and quickly after accumulation has reached a decent point. The same might be said of the Muhammadan system of succession.[1] Thus the

[1] Owing to the Muhammadan law of inheritance, there is a tendency for all Muhammadan families to become impoverished, and many of the Ashraf (or sharf "noble") have thus been merged in the ranks of the Ajlaf (or "mean" people). This is a serious matter which is now attracting the attention of the Muhammadan community, who hold that the law of inheritance laid down in the Hedaya was

capital that can be accumulated is very small, and the village indebtedness is chronic and increasing at an alarming rate. On the other hand, the system of primogeniture in the West is open to criticism from the economic point of view in certain respects. Though it stimulates individual initiative and enterprise in the younger sons of the family, it acts more or less as a solvent of the solidarity of family life, which is such a marked feature of the Indian social system. Again, it is also open to some of the objections that have been advanced against monopolies and entailed property by the jurist and the sociologist. The concentration of property in a few hands not only militates against that general diffusion of well-being and advantage, the aim of modern social legislation, but also creates a spirit of strife and opposition among the Have-Nots, who have been defrauded of what they believe to be their just claims in society.

The land system itself, again, is also responsible to a great extent for the minute sub-division of property. Under the system of peasant proprietorship, the ryot has become so strongly attached by the most sacred and deeply rooted ties to the soil that, rather than relinquish his hold on it, he will burden himself and his heirs with debt for generations; and gradually under the Hindu practice of inheritance the holdings become so minutely subdivided and overburdened by mortgages, that extended cultivation and high farming are made

intended for a pastoral people, and is not applicable to the present state of society in India. It is very undesirable that the ancient families should disappear, and yet this is what must happen sooner or later unless something is done to prevent it (Gait, "Census of India, 1901," vol. vi., Part I., p. 442).

almost impossible. An analogy may be found in the law of equal inheritance and its economic effects in France.

Again, though, the one great advantage that the small farmer has as a rule possessed is inherited and empirical skill; this is, however, useful under conditions fixed by custom, and may, when conditions are changing, prove an obstacle in the way of improvement.[1] In Indian agriculture the conditions, in fact, have now greatly changed, and the small farmer, being unable to adapt himself to circumstances, has become much worse off.[2]

The joint-stock system has secured a characteristic co-operation of the family members in our society, which, though advantageous at first, is detrimental to progress in a higher state of industrialism. In the agriculturalist's family the women are found freely to assist the men in field work, sowing the seeds, weeding, or assisting their husbands in irrigating the fields. In Behar, where the pressure of population has led the males to

[1] In Belgium, however, where there is a great number of small landholders, and sub-division of the soil promoted by the French Law of Succession, also density of population, agriculture has been very successful. The system of cheap and rapid transport, in which light railways fill a prominent *rôle*, while the canals are not neglected, contributes to the undoubted success of Belgian agriculturists. Co-operative methods of purchase and sale are encouraged, and agricultural education is systematically diffused in the country, thus giving an example to Indians to imitate with profit.

[2] One bright side has, however, been pointed out by Sir George Birdwood. To the land and village system, he says, are due the industrial and artistic skill and cunning of the people. "There can, in fact, be no popular art without popular traditions, and traditionary art can arise only among a people whose social and municipal institutions are based in perpetuity on a democratic organization of their inherent right and property in a national soil, such as is secured to the people of India by the ryotwari tenure."

emigrate to Bengal for work, the woman leads a more secluded life, seldom taking an active share in outdoor work, and the seclusion is greater as the family is richer or the caste higher. Agriculturist's wives will on no account come to the fields in which their husbands work, the breakfast being brought there by infant girls or old females, usually the mother. As a rule females do not work in the fields, except the very old or very young, who are sometimes deputed to tend cattle in plots adjoining to homesteads. But the women may be sometimes seen employed in threshing out the grain, winnowing, or stacking the hay. In her house, however, the woman works the whole day. She cooks the food, and makes all necessary preparations for that process. She has also to grind the wheat or the pulses on the Janta or husk the rice on the Dhenki, and if she has any leisure, she spins cotton or silk threads, or twists the san, cocoa-nut, jute, and rhea fibres into ropes.[1] If it is an artisan's family, the woman can assist in the husband's work more materially. The weaver's wife cleans the thread and arranges the warp and woof. The oil-presser's wife manages the bullocks and runs the *Ghani*

[1] A spinning-wheel does not cost much—Rs.1 to Rs.1-8—according to the quality of the wood. The spinning hours are those which a woman snatches amidst labours at home; an hour after midday and the night meal is a most usual time in which she plies her wheels. Sometimes she works at it in the dark before day dawn, guided by the dexterity of her fingers. In the course of two months her savings in thread, after exchanging with the trader, suffice for a piece of cloth for herself or her husband, for which she pays the weaver at the rate of two pies per cubit, either in cash or in *Dhan*, the length of the cloth being seven or eight cubits.

For twisting fibres, a few bundles are hung from the thatched roof of the verandah, and the woman twists, by means of a reel called *Dhera* or Thakur, into twines of different thicknesses.

when the *Kalu* is working in the fields. The silk-rearer's wife diligently and carefully feeds the cocoons. The tailor's wife uses the sewing-machine when there is hard work for the family. The laundress herself washes the clothes in the tanks. The banglemaker's wife makes the slow fire and rolls the lac rods into thin pencils. The Muchi's wife helps her husband in the collection of hides and skins. The Dom woman weaves the baskets. The potter's wife collects and prepares the clay. In some cases, again, the woman does much of the labour of carrying the goods for sale at the market. Thus bangles are sold exclusively by women. The fish-woman is better at bargaining than her husband. The laundress carries the clothes to the Zenana. The milk-woman and the oil-presser's wife also carry their products to the inmates of the rich man's household.[1]

The boys of the family also are all usefully employed. They do most of the work of pasturing the cattle. They collect fuel and manure, milk the goat, and sometimes cut grass for the cows. The girls at their father's house have not to work much. In the artisan's family the boys, like their mother, can do more work. They are early trained as apprentices. In Madanpura, Benares, I saw boys and girls of four or five years arranging the nakhsa threads by means of wooden handles, and

[1] The woman, however, has no freedom and initiative in her occupation. In the above cases she merely helps her husband to some extent in the maintenance of the family. Only in the lowest social grades the woman goes out and earns her living independently. Thus, among the *Sonthals*, *Dosadhs*, *Ghatwals*, *Chekuiyas*, etc., the women are seen to work as day labourers in the fields, or as *rejas*, carrying bricks and mortar in the building industry.

thus helping their father in his weaving. Thus the boys are trained in the craft quite early, and they begin work as soon as they learn some of its rudiments. The system, while it provides for all the family members, gives each his place and occupation, so that his services can be best utilized in the interests of the family.' But the family co-operation is advantageous in the first stage, only for production on a small scale. The division of labour being confined to the small family group, there are none of the economic advantages of co-operation and division of labour in society on an organized scale. There is little scope for the utilization of capital. The wealth that remains after providing for the few agricultural implements and seed and manure, or artisan's tools goes to bedeck the persons of women, or is spent on family property which may be deteriorating. New investments of capital are disliked. The system discourages individual initiative, and consequently there is loss of personal energy. The stimulus to individual exertion being not very great, progress is difficult. Thus the organization has lost much of its older vitality, now in a stage of industrialism dominated by ideas of individual gain and by the passion for personal advancement.

# CHAPTER IV

## CASTE AS AN ECONOMIC FACTOR

We have seen that the family and not the individual is the unit of the Indian economic organization. In India the family is the natural sphere for the working out of the struggle for living. There has also developed the idea of a larger unity in society on the basis of kinship or community of blood and origin. Thus along the lines of the family, the conception of the caste, *Samaj*, or race, has sprung up. The caste, or *Samaj*, not only determines the area within which marriage can take place, but defines to some extent the proper and characteristic occupation of its members.[1]

The conception of caste as the social unit is essentially a dynamic one. In spite of the origin in the racial idea, the unit is proselytizing, constantly growing by accretion. It is always drawing new people within its own fold, and, giving them some

[1] According to Nesfield, the communion of profession is the foundation of caste. He does not admit of any other origin: he deliberately excludes all influence of religion and race. Risley, however, is in direct contradiction with Nesfield. The race, according to him, is the generative principle. The "nasal index" is the formula for the proportion of the nose : this is the most certain criterion of race, and he sets down as a law of the organization of the castes in the East Indies that the social rank of a man varies in the inverse ratio of the size of his nose!

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characteristic customs and institutions, it ensures for them a well-defined rank and place in society. The introduction of new blood into the caste saves it from the deterioration of the stock following from endogamy within the *Samaj* continued for several generations. It has been shown by the last three censuses that the Hindus proper as well as the out-cast races are strongly affected, in their physical characteristics as well as social institutions, by inter-course with numerous indigenous and aboriginal tribes. Indeed, the descendants of aborigines now in connection with Hindus are ten times in excess of those who have remained loyal to their original tribes. The effect produced on the Hindus them-selves has been of a very levelling character, and, as nearly all the castes have to some extent allied themselves with renegade aborigines, they have to that extent lost their Hindu purity and genuine-ness; thus their blood has been diluted to a great extent! Thus the enormous class of Vaidyas and Sudras, which constitute nearly five-sixths of the entire population of the country and are the chief source of its economic well-being, though showing in the main the preponderance of Hindu traits and characteristics, exhibit here and there unmistak-able signs of aboriginal alliances, especially in certain castes, or clans, or families. This process of assimila-tion of the Hindu castes with the aborigines con-tinues to the present day. Some aborigines are entering within the limits of recognized castes, while others are forming new castes at the lower end of the social ladder.[1] Aboriginal warriors have assumed

[1] "Caste is the frame of the whole Brahminical organization. It is in order to come within the pale of Brahmanism that the aboriginal

the name of Kshatriyas and have been allowed that proud name; while aboriginal priests are up to the present day assuming the name of Brahmans as one by one their tribes enter within the pale of Hinduism. A patriarchal and sacerdotal organization thus replaces the old totemistic or matriarchal system. The Brahmin, the Gotra and its Rishi are all introduced to effect this social transformation. Exogamy and endogamy are now regulated by *Gotra* instead of by totem, and besides there is the general tendency of what Risley calls very inappropriately* "hypergamy," the tendency to marry the girl into the higher caste or status. This bears comparison with the sanctions for *anuloma* and against *pratiloma* in the Hindu Smritis.

Thus the aboriginal races are gradually adopting the civilization and social structure of the Hindus. The aboriginal castes who have been brought in contact with Hindu castes since a longer period, like the Chandals, the Bagdis, the Meleyas, the Khoyras, the Lohars, etc., have Brahmans of their own just like the Hindu castes of Kaibartas or Goalas; while the Haris, the Bauris, and other castes who are lowest in the scale of semi-Hinduised aboriginals have no recognized Brahmans, Purohits or Pandits, and perform their religious and social ceremonies themselves without the aid of hired priests. Again, castes in which the process of Hinduisation is more advanced are classed as Nabasakha or the new branch. Besides the Kayasthas

populations constitute themselves in caste and accept the strict regulations of caste and the phenomenon goes back high into the past."—"*Senart. Des Castes dans l'Inde,*" vide *Indian Antiquary*, May, 1912.

or Vaidyas, they constitute the artisan and the trading castes like the Kamar and the Kumar, the Teli and the Tamuli, the Kansari and the Sankhari, the Tanti, the Napit, the Sadgop, the Moyra and the Gandhabanik. Each of these castes have Brahmans, or Brahmans belonging to particular castes, who perform religious ceremonies. These castes are all considered purer than the castes mentioned above. Their water will be taken by high-caste men, but not that touched by the former.[1]

It may be observed in connection with this intermixture of Hindu castes with the semi-aboriginals that a large portion of the Hindu's decorative, artistic, and manual skill, *i.e.*, delicacy of touch and manipulation of finger movements, is due to the introduction of the Dravidian element, characterized by a high degree of natural endowment in these respects. Thus the Hindus, popularly characterized by the exclusiveness and strictness of caste prejudices, have notwithstanding shown a catholicity and wonderful power of assimilation with such important effects on the social and industrial

[1] This tendency of assimilation is most strong in Bengal for two reasons. First, the small colonies of ancient Aryan emigrants settling amongst Kolharian and Dravidian peoples intermarried with the latter. Secondly, the prevalence of Buddhism for centuries, which encouraged such intermixture. Perhaps the strength of Buddhism in Bengal was derived in part from the non-Aryan element in the population. Even now the traces of Buddhism that are found in Bengal are to be seen among the lower semi-aboriginal castes like the Bagdis, the Haris, the Sarakis, etc. The "depressed classes" of Bengal are mostly the survivals of the now-forgotten Buddhism. They are now depressed because they have lost the memory of their glorious achievements in the past history of Bengal: it was they who preached the ideals of Buddhism in Tibet, China, and Japan, who carved the magnificent temples of Borobodur in Java, and who cultivated trade relations with Ceylon, Siam, and Cambodia.

history of the country.[1] This significant movement in Indian sociology[2] has, however, received a considerable check of late through the proselytizing activities of Christian missions.

Again, even within the caste there is much scope for advancement. Instances are quite common in which certain members of a caste have risen to a higher status due to wealth and ability, leading to the subdivision of the caste into groups. Indeed, there is always visible an upward economic movement in a prospering community. Thus it comes to divide itself according to the social scale: (*a*) handicraftsmen, (*b*) middlemen of the trade, (*c*) middlemen of other trades. As the community is thus divided according to the separation of the occupation, in every step in the ascending scale there is a ramification of castes and occupations. In the upper strata the original fluidity is lost, and the caste and status tend to become more or less stereotyped. Thus the higher sub-group ceases to consort with the lower in eating and marrying, and gradually, by an inevitable course of development, is differentiated into a new caste, till even the common origin is sometimes forgotten.

The Suvarnabanik is quite distinct from the *Suvarnakar*, the former being the traders, and the latter artisans, goldsmiths, and it is remarkable that members of the Baniya caste engaging in the

[1] It is significant that the process described above is one of growth by general absorption, adoption, and assimilation, and not by conscious integration and differentiation which can only be fostered under the stress of political forces in building up a national state.

[2] As it has been well remarked, "the history of religions presents us no stranger phenomenon than the tacit process of proselytism by which Hinduism is absorbing within itself millions of the less civilized tribes of India."

profession of goldsmiths are styled Sankara, or mixed baniks, and excommunicated from the society of their brethren. The Saha, which is the most enterprising and prosperous community in Bengal, comprising a large number of cloth merchants, sal-traders, wood-dealers, and bankers, is quite distinct from the Sunri, who is the distiller (artisan), or the wine-merchant. The Tilis derive their origin from the oil-pressing community. They are now engaged in trade and money-lending, and have come to constitute a caste distinct from the Kolu. Among the fishing castes, when a man has saved some money his first idea is to give up fishing and become a fishmonger. The middlemen, called *nikaris* or *gunris*, now constitute a distinct caste, higher in status than the ordinary fishing castes.[1] In Dacca the *Sankhari*, or the shell-cutting caste, is divided into two sub-castes : (*a*) Bara-Bhagiya, or Bikrampur Sankhari, (*b*) Chhota Bhagiya or Sonargaon Sankhari. The latter are a comparatively small group, constituted of more expert master artisans, who work at polishing shell which they purchase rough cut—a departure from traditional use, which accounts for their separation from the main body of this caste. In other districts, owing possibly to the smallness of the caste, no similar groups have been formed; recently, a certain portion of the Dacca Sankharis have become traders, writers, timber and cloth merchants, and claim on that account to be superior in social rank to those who manufacture shell bracelets.[2] This is an interesting example of a caste in the course of formation.

[1] Risley's "Tribes and Castes of Bengal."
[2] *Ibid.*, vol. ii., p. 221.

Perhaps the characteristic and most remarkable example of the upward economic movement and consequent social differentiation is to be seen among the weaving community of Calcutta. There are several grades, such as the Basaka, the Dakshinkul, and the Madhyamkul *tantis*. The Basaks generally are now engaged in trade and usury. The *Dakshinkuls*, up to about fifty years ago, were active traders with the English cloth and silk merchants, as well as general agents and importers. The Madhyamkuls still practise their hereditary craft. Originally the weavers settling in Govindapur and Sutanati prospered in connection with the English on account of their trade in the textiles and dye-stuffs, and, according to the general movement indicated above, gradually rose in the social scale, and, becoming middlemen and importers, dissociated themselves more or less from their humble brethren of the craft. These middlemen formed themselves into *Dakshinkuls*, and the general traders differentiated themselves into the *Basak* community. With this economic differentiation there has been a corresponding social one, with the result that the Basaks, the Dakshinkuls, and the Madhyamkuls do not intermarry, though originally they came from the same stock. For these historical reasons these classes of the weaving community are to be found only in the centres of European cotton trade like Calcutta, Howrah, Hughly, Chandernagore, and Serampore.

In the case of agricultural communities this upward movement comprises the following stages, ascending in order in social status : (*a*) the cultivator, (*b*) the cultivator who also employs labour,

(*c*) the mahajan or money-lender with or without agricultural occupation, (*d*) the landholder.[1]

The upward economic movement, both in the agricultural as well as the industrial castes is the cause of the vigorous vitality and fruitfulness of those classes among the population. If we always bear in mind the fact that almost all the industrial castes follow more or less the agricultural occupation, we can easily see the wide choice of employments and modes of living among them. In each of these employments there are, as we have already pointed out, distinct grades of occupation to which the caste-man can rise by degrees through diligence and ability. There is, again, the stimulus to labour due to the fact that the higher grade of work implies improved social status. Thus there is continuous scope for enterprise and rise in the social scale through diligence and ability. Indeed, a trade or profession tends to become stereotyped and too rigidly followed from father to son for generations without any improvement, only when the caste loses its vigorous life, its enterprise, initiative and inventive faculty. Where, on the other hand, the caste shows life and vigour, the trade is not followed in the same way by the family for generations, but there is more or less of a wide choice of employments and of distinct grades of profession to which a man can rise by his labour and skill. The Chamars afford an excellent specimen of a caste of this type, being noted for their internal prosperity and consequent growth beyond that of other castes. The hereditary occupation of

[1] The hunting and fighting tribes are gradually lifted up to the status of Kshatriyas and Rajputs as well as landholders.

these people is the manipulation of leather, as dealers in hides, tanners, shoemakers, harness-makers, and the like. Their caste has seven divisions, each of which undertakes a separate branch of the general trade, while, in order to give full scope to each so that one may not intrude on the province of another, they maintain no mutual intercourse in the smallest degree, and permit no intermarriages or any social or festive union. There is also scope for an improvement from one grade to another; a Chamar by his ability can rise from the lowest to the highest profession of the industry. Again, the caste has been much too wise not to restrict its labour merely to the pursuits of ancestors. Many Chamars have become servants, grooms, day-labourers, and coolies; and a very large number have taken to agriculture. Throughout a large portion of Northern India extensive tracts are entirely cultivated by this caste. As cultivators they are laborious and fairly intelligent. Thousands of villages are in their hands, in most of which they are only tenants; yet in not a few they are in the position of landholders.[1] Like the Chamars, many other low castes also have a wide choice of occupations.[2]

[1] M. M. Sherring, "The Unity of the Hindu Race," the *Calcutta Review*, vol. lxxi., p. 216. His remarks in this connection may be quoted: "They have been free to choose various employments which their families have followed from generation to generation with such regularity and strictness that many castes are known by their occupations. From this division of labour, which doubtless has its serious drawbacks, arising from the circumstance that a trade or profession is too rigidly followed from father to son, leaving at last little scope for enterprise and the exercise of the inventive faculty, the great increase of the Sudras and castes below them have nevertheless chiefly resulted."

[2] Where this diversity of occupation is not found, the population

Indeed, the evil of caste, sociologically speaking, only arises when the fluidity is lost and the caste in the higher strata frames strict rules forbidding intermarriage with the lower sections, and, industrially speaking, when the caste becoming strict and stereotyped checks the upward economic movement from the lower to the higher branches of the occupation. The occupation embraces a whole crowd of distinct castes or classes, each of which enforces unmeaning distinctions with a rigidity that kills all originality and initiative. Thus, in the United Provinces amongst the workers in metal, the *Kasera* forms a distinct caste from the *Thatera*. The *Kasera's* speciality lies in mixing the softer metals, zinc, copper and tin, and moulding the alloy into various shapes, such as cups, bowls, plates, etc. The *Thatera's* art consists in engraving and polishing the utensils which the *Kasera* supplies.[1] No *Thatera* can rise to the *Kasera* group, and there is no intermarriage between the two sections.

Thus the occupations become isolated, and the isolation leads to narrowness and consequent stagnation. Among the oil-pressers there are two subcastes which have originated from an industrial improvement.

The *Ghana*, *Ghani*, or *Gachua* Telis work an oil-mill of primitive pattern. The machine has no hole for the removal of the oil, which has to be soaked up with a bit of rag tied on to a stick. The

cannot grow. Thus the Rajput tribe is restricted in its pursuits, so that many of its members are unable to obtain a livelihood for themselves, but lead an indolent life as dependants on their wealthier brethren. The increase of the tribe is, in consequence, seriously affected.

[1] W. Crooke, "Tribes and Castes of the United Provinces."

*Kolus* use a mill with a hole to let out the oil.[1] The status of the latter is very low. The former do not adopt the improvement, thus the more ingenious craftsmen pay the penalty for their intelligence. In Dacca, the *Bara Bhagiya Kumhars*, or potters, have separated into two divisions—the first, descended from Tilak Pal, only make black utensils ; the second, sprang from Mahadev Pal, only make red.[2] The distinction is unmeaning, nevertheless it is enforced with rigidity. Similar castes marked off into distinct grades or classes by almost impassable barriers can also be cited. The distinctions which they emphasize serve only to impede economic progress and should not be tolerated by a healthy industrial community.

Among the Muhammadans there are occupation castes like those of *darzis* (tailors), *bhistis* (water-carriers), drummers, wire-drawers, etc., but these are not bound by strict regulations in the matter of food. But though under the democratic constitution of Islam theoretically all men are equal, there are grades of social rank recognized among them. The higher class which claims descent from the prophet or from some of his followers consider themselves superior to those sprung from Hindu converts. But these latter have brought with them some of the rules of caste, and many of the inferior agricultural and artisan groups are often as strictly endogamous as Hindu castes. Thus the *Jolahas* of Bengal, who are the most important functional group amongst the Muhammadans, form a strict and regular caste organization after the fashion of the Hindus. The

[1] Risley's "Tribes and Castes of Bengal," vol. ii., p. 307.
[2] *Ibid.*

movement from the lower to the higher rank in society is, however, much easier among the Muhammadans than among the Hindu castes, and is tersely described in the well-known saying: "The year before last I was a *jolaha;* last year a Sheikh (or respectable Muhammadan); this year, if the prices rise, I will become a Sayyied (or descendant of the Prophet)"; though the process of promotion, as Mr. Gait has pointed out, is not quite so rapid in reality as it is in the proverb. The advantage of an easy rise in the social scale is, indeed, the chief cause of the success of the Muhammadan *Pirs* in securing converts for Islam. In the Punjab and in Eastern Bengal, among the lower Hindu castes, a man engaged in an occupation which renders him contemptible in the eyes of his neighbours, such as the currier or sweeper, when he aspires to rise in social rank, adopts Islam and starts one of the minor industries which require little training. Thence the progress to a higher life and improved social standing is not difficult.[1]

The management of a caste is in the hands of the *punchayet* and its chief who is called by different names, Sardar, Mathbar, Pradhan, or Mandal. The Punchayet takes cognizance of all breaches of caste-custom in respect of religion, morality, or trade. Thus in respect of industrial matters, no member of a caste is allowed to engage in any occupation which is looked upon as degrading; a Jolah, for instance, may not mend shoes, nor may a Kolu serve as a washerman, nor a Dhunia act as midwife. In some cases a caste will not even allow its members to engage in avocations which are

[1] *Vide* W. Crooke, "Northern India," p. 130.

considered more honourable than its own traditional occupation. No member of a caste may endeavour to oust another from any employment he has obtained by offering to do the work for a lower wage or otherwise.[1]

The Punchayet sometimes frames regulations with regard to manufacture and use of raw materials. The weavers' Punchayet, for instance, in some parts of the country prohibited for several years the use of the artificial dyes and excommunicated artisans who dyed clothes in these colours. Among the Bhaskars or ivory-carvers of Murshidabad, no artisan can carve the figure of Krishna. If an artisan manufactures or sells the figure of their god, he incurs the displeasure of the Punchayet. The Punchayet also organizes trade strikes. Where the trade includes men of very different castes, as, for instance, *darzis*, or tailors and cabmen in larger cities, the Punchayet is much stronger. In such cases, the Punchayet shows remarkable features of similarity with the European trade unions, enforcing strict trade regulations in the interests of the caste, and presenting a united front against a common danger, or grave trade-peril.

We conclude with a few general observations on the importance of caste in the life of the artisans. The caste represents a social ideal. To the artisans the caste is only the family writ large. The casteman is the member of a larger unit. A member of the caste, even if he is an orphan, is not helpless, for the caste will feed and protect him and train

[1] Gait, "Census of India," 1901, vol. vi., Part I., p. 440. *Vide also* Mukundi Lal's article on "Trade Guilds in India," *Modern Review*, 1911.

him in his craft till he can earn his livelihood. And the caste provides an excellent system of training at the minimum of cost. Particular crafts being confined to the same caste, trade secrets are preserved and dexterity as well as quickness of perception are acquired most easily. Again, the boy has an imitative leaning towards the hereditary craft and begins with a fund of technical insight and education which it would otherwise require years to acquire. The caste gives the individual training. It is the caste on which he depends for help at the time of a death in the family. The caste-men are really his friends in need, as they also celebrate together a marriage or other occasions of rejoicing. To the caste also the individual looks forward for justice in case of injuries received, and the caste has the power of enforcing it by the sanction of certain penalties and above all by the power of final exclusion from the social group. Indeed, the real reason why the people still cling to the institution of caste-dinners and other forms of lavish expenditure at the risk of bringing poverty and indebtedness upon themselves is to be sought in the influence of the social ideal. This social ideal has begun to be superseded by the individualistic ideal of the West, but it still remains the ideal of the great bulk of our people, though it is sometimes, unhappily, an ideal of poverty of the individual and the family.

# CHAPTER V

## THE RELIGIOUS ELEMENT IN CRAFTS AND INDUSTRIES

Another important conservative element in Indian economic life is the Indian craftsman's strong religious consciousness which still persists. The family and caste define and circumscribe the craftsman's economic activities; it is his religion that give them their characteristic tone, dignity and simplicity.

In India the whole of life is regarded as religious, no part as profane. In this conception of all life as a sacrament, the product of the idealism of the Hindus and of their religion, the opportunity for art and craft is very great. The first essential of art and industry is imagination. To the idealistic mind of the Hindu, art and industry are the representation of one aspect of the Divinity which pervades every department of life. They therefore transcend the limitations of beauty and form in nature, and attempt to represent the ideal as the only true beauty. Beauty has an absolute existence in the ideal plane, and is revealed in the mind of the Hindu artist by God. The Hindu artist thus relies more upon the inward inspiration than upon any discipline in reproducing the external form. The God who is the source of all beauty, rhythm, proportion, and idea is Viswakarma, and to him all

the homage and reverence of the Hindu artisan are due, for all art and industry are revealed by him to the artisan. In the Mahabharata he is described as Lord of the arts, the carpenter of the gods, the fashioner of all ornaments, who made the celestial chariots of the deities, on whose craft men subsist, and whom, a great and immortal God, they continually worship. Viswakarma is not only worshipped by the craftsmen with offerings and ritual at the beginning of their work, but there are also numerous charms and songs with which he is invoked to ward off disasters and assist them in their work. In the Dasahara day every year Viswakarma is invoked by the Brahmin of the industrial caste.

विश्वकर्म्मन्निहागच्छ तुलावन्धमलं कुरु ।
शिल्पाचार्य्याय देवाय नमस्ते चित्रकर्मणे स्वाहा ॥

He will not only bestow riches, but also skill and dexterity to the artisans.

शिल्पनैपुण्यादि वृद्धिकारक श्रीविश्वकर्म्म प्रीतिकामो गणपत्यादि देवता पूजापूर्व्वक विश्वकर्म्म पूजामहं करिष्ये

In meditation he is दंशपाल महावीर सुचित्रकर्म्म कारक। विश्वकृत् विश्वधृक् च त्वम् रसनामानदण्डधृक् ॥ in pranām, शिल्पाचार्य्य महाभागग सुचित्र कार्य्यसाधक। विश्वकर्म्मन्नमस्तुभ्यम् सर्व्वाभीष्टप्रदायक ॥

In the Rupavalia, his form and attributes are thus described:

"Salutation I give to Viswakarma, the fair and great, who is renowned and free, who has five tilak-marked faces, ten arms, holding a book and writing style, a sword, an adze, a citron, a cup, a waterpot, a rosary, a cobra about his neck, a noose, hands betokening sternness and beneficence, and wearing a golden sacred thread."

The tools and implements are also worshipped by besmearing them with *Chandan* or sandal-paste. They are considered to be the gifts of Viswakarma, whom they are meant to interpret. Art thus becomes the interpretation of the Absolute or Love, not an abstraction but a person, God, and God aids the artisan in the revelation of His beauty. The artisan's work is also sacred. As is said in Manu—

"The hand of the artisan is always pure. So is (every vendible commodity) exposed for sale in the market and food obtained by begging which a student holds (in his hand) is always fit for use; that is a settled rule."

Another doctrine that exercises a most beneficial influence on craftsmanship is that of *Karma.* A man's deeds follow him in his next birth. Thus one who knows amiss his craft will fall into hell and suffer after his death. Builders and painters taking money falsely from other men thereby grow poor. Builders and painters who know their business well will become rajas, lacking naught; so also cunning painters are meet to become nobles. Builders and painters both, who know naught of their craft, when here are given according to the work accomplished, take that money and (leaving their work) rush home therewith, though they get thousands, there is nothing even for a meal; they have not so much as a piece of cloth to wear, that is the reward of past births, as you know; dying, they fall into hell and suffer pain a hundred lacs of years; if they escape, they will possess a deformed body and live in great distress; when born as a man it will be as a needy builder; the painter's eyes will

squint—look ye, what livelihood can there be for him?[1]

Again, the holiness of nature in its infinite variety and beauty is a fundamental thought of the Hindu, and is not only fixed and ritualized in the series of the Hindu year's fasts and feasts, but finds an expression in arts and crafts. Thus the Hindu craftsman decorates his handiwork with the forms of well-known plants and flowers, birds, and beasts. He worships God with grass, leaves and flowers, and loves the birds and beasts associated with His life. These, therefore, he represents in his handiwork. Perhaps the most significant of the designs is the lotus pattern, which to the Hindu is the symbol of life, the water in which it floats being the eternity of existence. This beautiful conception is crystallized into the arts of India, and appears again and again, not only in Hindu but also in Muhammadan decoration. Among the Hindus the most familiar copper or brass vessel used in home, viz., the *lota*,[2] has derived its shape from the partially expanded flowers of the sacred lotus. Among other frequent flowers may be mentioned the iris, the imperial pendant lily, the rose, and the polyanthus, with its gracefully nodding head of flower and revolute leaf-margins, and many fruits of the plains, such as the mango,

[1] The Maya matya, quoted in Dr. A. K. Coomaraswamy's "Indian Craftsmen."

[2] With the Muhammadans the lota has been given a spout, because the Koran ordains that a man shall perform his ablutions in running water, and the water when poured out of the vessel is considered to be running water. The shapes of the Hindu and the Muhammadan vessels and their respective uses have given birth to two widely different forms of both domestic and decorative metal works characteristic of our country.

brinjal, etc., are also represented. In the textiles flowers are very common. *Buti* is a single flower or figure not connected by a *trellis*, or *jali* or *buta*, when the flowers are large. The various flowers depicted are denoted by further appellations, such as *chameli buti* (jasmine flowered), *gul dandi buti* (chrysanthemum flowered), and *genda buti* (marigold flowered). When circular the *buti* would be described as *chanda*, and *turanj* is the name of the so-called cone-pattern of the Kashmir shawls. A *pan-buti* would be heart-shaped like the betel leaf. When the floral ornamentations form a network that covers completely the field, the textile is called *jalar*. At other times the poetic name of *panna-hazara*, or thousand emeralds, is given when the sprays of flowers are connected together like the settings of a jewel; so also the expression *phulwar* is used when a running floral pattern covers the entire field.

Among birds the most frequent are the peacock and the paroquet, represented in wood carving as well as in the textiles. In the textiles the birds are placed usually head and tail in the vertical bands and in the transverse ones, with each alternate bird looking over its shoulder. Another bird often depicted resembles the swan or goose—the vehicle of the great creator Brahma—at other times it is the Garuda. The lion, the elephant, the horse, and the ox are also frequently represented in the arts.

The representation of these bird and animal forms in life and vigour depends upon the guiding and controlling power of a living religion. When religious life becomes dull, a decorative art becomes

a mere reproduction of conventional forms. The Hindu craftsman moulds, paints, or carves these patterns out of his own head, not from any visible model before him. His patterns are deeply rooted in the national life, full of symbolical associations that have no meaning to the foreigner, but enhance their significance a thousandfold to the pious Hindu. For the reproduction of these patterns which thus form a characteristic language of the art of the people, the craftsman depends upon his race-memory and his own imagination worked up by a profound devotion. When he will begin his work, the craftsman, according to the injunctions of the Shastras, will proceed to a solitary place, after purificatory ablutions, and wearing newly-washed garments. Then he is enjoined by the Shastras to compose individual consciousness. Thus the mental image becomes clearly defined. When the artist vividly sees his picture he draws it from his own mind. The craftsman is also instructed to rely upon knowledge obtained in sleep or dreams. On the night before beginning his work the imager, after ceremonial obligations, is asked to pray, "O thou lord of all the Gods, teach me in dreams how to carry out all the work I have in my mind."

It should be observed in this connection that there is an immense variety of patterns of ornamentation in details in different parts of our country. Each centre of art develops its own peculiar variety of patterns and conventions. Thus in Ahmedabad, the phenomenon, not unfamiliar to the Indian traveller, of a *banyan* tree growing out of and around a palm, until in its snake-like

entanglements of root and branch the banyan strangles its foster plant, is very common in arts and handicrafts. It is repeated time after time in the carved hide shields, in the *kinkhabs* and other textiles, and in the gold and silver plate and jewellery, until it has become the characteristic feature of Ahmedabad art. This peculiarity is absent in the work of all other art-centres in the country.

Mythological scenes are also represented very frequently in the arts. Incidents in the life of the youthful Krishna are depicted with exquisite skill and delicacy in woodwork. The moonlight dance of Krishna and the milkmaids, while flowers are being showered upon them from the clouds, or the passionate longing of Krishna for Radha, and the joy of their union are depicted with great feeling and charming idealism. Nature seems to rejoice at their union on earth ; every bough of the tree, every bird and animal, as also the fish in the waters, sing their praise, while the joy of the trooping homeward cattle that is also depicted is admirable. There are also, in carved woodwork, the figures of Chamunda slaying the demons Chanda and Munda, Lakshmi with her two attendant elephants, Saraswati playing on the *vina.* While in the ivory work, especially in Bengal, the figure of Durga thrusting her spear into the demon Mahishasur, and attended by Lakshmi, Saraswati and Ganesh, is very popular, and meets a large local demand. The potters in almost every village of India, after making the domestic vessels, make toy gods and goddesses, prototypes of those represented in the higher arts.

Thus the arts and crafts of the Hindu are essentially idealistic and religious. The arts and crafts of India are applied to the ends of religion and mythology. Religion has not only been the motive force and inspiration to the Hindu artist and craftsman, but ceremonial worship has also its influence on art.

The implements that are used in temples for worship have greatly stimulated art conceptions. Throughout the country the *Kosa* or *panch patra*, as well as the *Kusi* or *achamani*, the *dhupdani*, the *arati* lamp, and the bells are often extremely beautiful objects, largely drawn upon in decorative art. Again, the *sinhasana* of the pattern of the lotus-leaf, a beautiful symbol, has originated some of the most beautiful products of Indian art. Thus the religion of the people has contributed to keep alive a high degree of mechanical skill and artistic feeling by creating a demand for the ceremonial implements in temples as well as in the household throughout the country.

The religious festivals of the industrial castes are not many in number. The worship of Viswakarma comes off on the Bhadra-Sankranti day. The carpenter, the blacksmith, the barber, the potter, *Sankhari*, and *Kansari* do not do any work on that day, and worship their respective implements, washing them in oil, ghee, and Ganges water, and besmearing them with sandal-paste and vermillion. But the Hindustani artisans in Bengal do not observe this ceremony. In Eastern Bengal the women of the middle class, who work at the charka, or spinning-machine, worship Viswakarma on the first day of the Bengali year. They decorate the

Charka with flowers, and with their own hand-drawing, and give offerings of milk, *dahi*, and cheera. After worshipping the charka, they tell a story recounting the miracle by which a king acquired great riches, because his prince's wife worshipped Viswakarma in secrecy, being advised by her foster-mother, a kite of the forest.[1] Another day in which the Hindu artisans of Bengal abstain from any work is the Bijaya-dasami day. The weavers particularly do not work on Bijaya-dasami, on *ekadasi* and *dvadasi* days, and worship the loom, the shuttle, and the weights and measures, with flowers, vermillion, and sandal-paste. On the *trayodasi* day they begin work anew. The telis, the tamlis, and gandhabaniyas, who deal in spices, worship Gandheswari on the Baisakhi Purnima day. An image of Durga is made, and the goddess is invoked to aid trade, वाणिज्य वृद्धिपूर्ब्बक श्रीदुर्गाप्रीतिकामो श्रीदुर्गापूजामहं करिष्ये। Among the traders the first of Baisakh and the Ramnavami days are observed as days of *salth*, in which they begin their accounting anew in new account-books.

On the life of the craftsman, his inspiration, his ideal and handiwork, and his joys and amusements, religion continues to exercise a direct and potent sway, the significance of which can scarcely be over-estimated.

[1] See Gurubandhu Bhattacharyee's article on *Biswakarma Brata*, *Prativa*, 1320.

# CHAPTER VI

## THE STANDARD OF CONSUMPTION

THE joint family and caste and religious ideas and ideals govern the economic and social life of the Indian craftsman and have contributed to determine his standard of comfort and consumption, his wants and his activities. The standard of consumption of the Indian craftsman is being slowly and gradually modified by the decline of the influences of the family and *samaj* as well as religion as social factors. Still, the average craftsman of the Indian village is persisting in his traditional and socialized standard of life. A study of his plane of living, indeed, gives an important evidence of the slow change in our rural economy and methods of life.

I have for several years been engaged in collecting family budgets with a view to estimating the relation of income to expenditure of an average labourer, and thus come to an approximate knowledge of his plane of living. The following are standard family budgets of different classes of Indian labourers which have been framed after a careful investigation of a large number of family budgets :—

## FAMILY BUDGETS.

Economic condition of our people as indicated by statistics of expenditure.

Percentage of the expenditure of the family of—

| | I. | II. | III. | IV. | V. | VI. |
|---|---|---|---|---|---|---|
| | Day labourer. Percent. | Agri-culturist. Percent. | Carpenter Percent. | Black-smith. Percent. | Shop-keeper. Percent. | Poor middle class. Percent. |
| Food . . . . . | 95·4 | 94·0 | 83·5 | 79·0 | 77·7 | 74·0 |
| Clothing . . . | 4·0 | 3·0 | 12·0 | 11·0 | 9·0 | 4·7 |
| Medicine . . . | — | 1·0 | 1·5 | 5·0 | 5·9 | 8·0 |
| Education . . . | — | — | — | — | 1·0 | 3·3 |
| Religious and social ceremonies | 0·6 | 2·0 | 2·0 | 4·0 | 5·0 | 8·0 |
| Luxuries . . . | — | — | 1·0 | 1·0 | 1·4 | 2·0 |
| Total . . . . | 100·0 | 100·0 | 100·0 | 100·0 | 100·0 | 100·0 |

The next tables give family budgets of people of

AMERICA AND EUROPE.

| | I. | II. | III. | IV. | V. | VI. |
|---|---|---|---|---|---|---|
| | Income 200$. | Income 300–400$. | Income 500–600$. | Income 700–800$. | Income 900–1000$. | Income 1200$. |
| AMERICA— | | | | | | |
| Food . . | 49·64 | 45·59 | 43·84 | 38·89 | 34·34 | 28·63 |
| Clothing . | 12·82 | 14·14 | 15·27 | 16·63 | 16·84 | 15·71 |
| Shelter . | 15·48 | 14·98 | 15·15 | 15·60 | 14·96 | 12·09 |
| Fuel . . | 7·07 | 6·04 | 5·63 | 4·42 | 4·00 | 2·57 |
| Lighting . | 1·01 | ·98 | ·97 | 8·80 | ·74 | ·45 |
| Luxuries . | 13·94 | 18·27 | 19·14 | 23·88 | 29·12 | 40·05 |
| EUROPE— | | | | | | |
| Food . . | 48·32 | 49·58 | 50·06 | 44·00 | 46·24 | |
| Clothing . | 19·08 | 14·18 | 15·21 | 18·97 | 14·15 | |
| Shelter . | 9·38 | 11·93 | 10·26 | 9·49 | 10·49 | |
| Fuel . . | 5·38 | 5·49 | 3·32 | 3·97 | 5·19 | |
| Lighting . | 1·66 | 1·59 | 1·37 | 1·20 | 1·53 | |
| Luxuries . | 16·18 | 17·23 | 19·78 | 22·37 | 22·40 | |
| Total . . | 100·0 | 100·0 | 100·0 | 100·0 | 100·0 | |

Dr. Engels, after a careful investigation of family budgets, inferred—

(1) As the income of a family increases a smaller percentage is spent on food.

(2) As the income of a family increases the expenditure for clothing remains approximately the same.

(3) In all the cases investigated, the percentage of expenditure for rent, fuel, and light was nearly the same.

(4) As the income increases a constantly growing percentage is expended for education, health, recreation, amusements, etc.

Bearing in mind these principles, and comparing the Indian budget with the budgets of the American and European families, we come to the following conclusions :—

(*a*) That even the lower middle classes of our country are much poorer than ordinary labourers of America and Europe.

(*b*) That the luxuries of the lower middle classes are not justifiable if we consider their proportionate expenditures for food and education.

(*c*) That the condition of our day labourers is miserable to the extreme.

(*d*) That amongst all classes the expenditure for the social and religious ceremonies and friendly dinners is inordinate.

(*e*) That the poorer classes are gradually adopting the luxuries of the poor middle classes.

The conclusion (*d*) that the expenditure for the social ceremonies is disproportionate to the income enjoyed by the people unmistakably proves how our mode of life is fundamentally the same in spite

of the impact of Western civilization on our society. Social ceremonies have still their time-honoured value and religious significance to every Indian in spite of the economic stress which he is subject to in modern times. The reason is not far to seek. We have already seen that the Indian joint-family has not been broken up though the growing economic struggle encourages its disintegration. The people are still dominated by their own social ethics, the aim of which is to establish an exquisite balance between the needs of individualism and those of the caste, or *samaj*, embracing the individual and his family. Thus the individual has at times to subordinate his interests to those of his family and his caste. The caste-dinner represents the close connection between the family and the caste. It is, indeed, the symbol of the supremacy of the caste, of the predominance of the social ideal, sanctioned by religious decrees. For every social ceremony is associated with some religious observances. Expenditure on a social ceremony does not display the pomp of wealth, but it shows virtue and piety. It is not wastefulness. It contributes to social progress ; and is not as condemnable as the luxury of a millionaire spending thousands in one night in a ball-dance. It is associated not with momentary pleasure and dissipation, but with self-restraint and devotion. It gives not individual satisfaction, but social contentment. Thus has modern India stood against the domination of a crass individualism, still maintaining the time-honoured valuation of social objects. The abject poverty of the individual has not modified the standards of social choice.

# CHAPTER VII

## RETROSPECT AND FORECAST

A STUDY of the social environment of our country has prepared us for an investigation into the characteristic methods of Indian industry. Economic organizations derive their support and inspiration from the social structure and the ethical and religious ideas or ideals it embodies. The institution of the joint family, which in India is still the proper sphere for the working out of the struggle for living, has defined the nature and character of industry carried on in the home, with the collaboration of the family members who are often entrusted with its important processes. The industrialists are inheritors of a family occupation handing down their crafts from generation to generation. They inherit not only the family industry, but also the hereditary skill and artistic excellence, which no amount of technical education can produce amongst artisans. The industrialists also belong to a caste which lays down its own social and economic code rules. The domestic industry, division of labour amongst the members of the family securing important economies of production, family ambition striving to maintain the traditions of the family industry, heredity maintaining high excellence in the practice of a family art, the caste, more or less

a trades-union, laying down strict regulations in the interests of the craft, religion which enforces these regulations, and is the source and inspiration of a life of simplicity and austerity, of simple wants and few luxuries in which alone can popular art best thrive, these are the socio-economic conditions which have determined the character of our industrial organizations. And the industrial organization has also determined the nature of the trade and credit system.

India is essentially the land of cottage industries. Our artisans work in cottages. They live more or less out of touch with the commercial world. The system of travelling brokers and middlemen which make their products accessible to the markets is just what is suitable for a country of cottage industries. To support the organization of cottage industries there have, indeed, been developed a characteristic system of credit, and an organization of trade, a class of itinerant brokers, carriers, and intermediaries, as well as money-lenders. Thus a description of some cottage and village industries in Book II. will be followed by an examination of the credit and trade organizations of our country in Book III.

# BOOK II

## *THE COTTAGE AND VILLAGE INDUSTRIES*

# CHAPTER I

## LAC CULTURE AND MANUFACTURE

LAC manufacture is one of the most important of our village industries. Lac enters into the agricultural, commercial, artistic, manufacturing, domestic, and sacred feelings and enterprises of the people of India to an extent hardly appreciated by the ordinary observer. The existence of the poorer communities in the agricultural and forest tracts is made more tolerable through the income derived from the collection of the crude article. Every village has its carpenter, cartwright, shoemaker, and tanner, and all these craftsmen use lac in some form or other every day of their lives. The blemishes and defects are plugged up and concealed by crude lac, and the surfaces are uniformly varnished or coloured with lac where colour is desired. Coloured lac, in fact, takes the place of the oil and paint of Europe. The silver and coppersmiths employ it as a resist-bed upon which to hammer out or punch certain of their wares. By means of lac coloured ornamentations are made on copper and glass wares, and also on ivory. Lapidaries construct grindstones of the same material, fused with sand, and with it cement blade to haft in knives and swords. Potters, bookbinders, and makers of smoking pipes all need lac as a varnish or a stiffening

material. Jewellers load hollow gold and silver ornaments with it, or fix the stones in these by its means. The makers of the humbler personal ornaments prepare most of their wares almost entirely of lac. Indeed, it is highly probable that one of the very earliest utilizations of lac was this very preparation of peasant jewellery. Lastly, in the hands of the lac-turner and toy-maker lac is supreme. The use of lac in the form of a spirit varnish is spreading among the manufacturers of certain classes of articles, such as carriages and furniture, India not having yet begun to make spirit varnishes, owing to the want of cheap industrial alcohol.[1] In Europe and America the demand for lac is very great. Its most important applications are in the manufacture of varnishes and in the supply of the chief material of sealing-wax. It is also extensively used as a stiffening material for hats, as an ingredient in lithographic ink, in the manufacture of gramophone records, and also as an insulating material in electric appliances. It is suggested that the last-mentioned utilization gave a fresh impetus to the lac traffic, which accounted for the expansion of the exports from India. In 1903 the price of lac went up from Rs.8 to Rs.40 per maund. But it has again fallen to Rs.20 per maund. The traffic in crude lac, however, has great prospects in future. The artificial substitute, the discovery of which was announced in Germany, has not been brought into the market. India possesses almost a monopoly of the raw article, Indo-China, the only competitor, exporting

[1] Watt, *Agricultural Ledger*, 1901, No. 9, also "Dictionary of Economic Products."

only an insignificant quantity of lac of an inferior kind.

Lac in India varies a good deal in quality. Kusumb tree gives the best lac. Phalsa tree lac is also good. Baer and Ghat-baer lac is only slightly inferior, and Palas tree lac, which is the darkest red, is the poorest of all, though the Palas tree is more frequently used than any other.[1] For lac-culture the trees are kept as free from ants and other insects as possible. To obtain vigorous growth of the branches, the trees are pruned, and the soil under them is cultivated. The pruning is done in February for the June inoculation, and in June for the November inoculation. The inoculation of seed sticks[2] is done by tying the sticks in different parts of a tree, with the interposition of a bundle of grass, or by putting them in mosquito-net bags and hanging them on the branches. A fortnight after the inoculation the empty sticks are taken down and used for the extraction of lac. The larvæ on swarming crawl to new wood and remain still, sucking the juice. While thus engaged, the lac covers them up from all sides. The lac may be considered as a secretion from the wounded branches due to the action of a bacterium. As the insects develop the incrustation round each also develops. If the object in the collection of lac be to procure the red dye, the lac-incrusted twigs are then gathered, before the larvæ have swarmed. But if the resin-lac be sought,

[1] Mr. N. G. Mukherjee, "Handbook of Indian Agriculture," p. 432.

[2] Mother lac should only be taken from trees of the same species, or species which have a harder wood (*vide* "Lac Cultivation," by Mr. T. N. Kotwal, a paper read at the Industrial Conference, 1912).

there would seem every reason to delay the collection until the swarming has taken place.[1] The industry assumed its present form while lac-dye (if not equally valuable with the resin) was a profitable by-product. Now that the dye has been robbed of its commercial value by the introduction of chemical dyes, a change in the season of collection is expected. The presence of the dye admittedly depreciates the shell-lac very greatly; it necessitates expensive, and possibly to the resin injurious, method of removal; and the decomposition of the larvæ gives the offensive smell to the factory which well-nigh becomes a public nuisance. It would thus seem that the time has more than once come when this state of affairs might be mitigated by some change in the season of collection that would allow of the colour being very largely removed before stick-lac comes to the factory. The collecting seasons at present adopted are May to June for the one brood, and October to November for the other; a delay of a month or six weeks in each case would see the swarming accomplished.

There is much scope for the improvement of the quality of the lac through the selection of the stock on a rational and scientific basis. Sir G. Watt does not even think it impossible actually to evolve a white insect, or, at all events, one to a large extent devoid of the objectionable colour, the removal of which so seriously enhances the cost of the present day resins. Mr. Stebbing has commended better methods of the cultivation of lac.[2] The chief improvement required to be made are in

[1] Watt, *Agricultural Ledger*, 1901, No. 9.
[2] Mr. E. F. Stebbing, "Notes on Lac Insect."

the direction of the formation of regular areas of coppice, either from seed or cuttings, which should be worked on a definite rotation. Experiments are also required to be made in such shrubs as *Cajanus indicus* (*arhar dal*). It is reported that this latter plant, if sown in November in Assam, will be fit to plant out at the close of the following rains, the plants being then stout saplings, averaging four feet in height. Planted in rows four feet by eight feet apart (1360 to the acre), it will, if well cultivated, be ready to receive the insect exactly two years after first sowing. Further, it is stated that the lac reared on *Cajanus indicus*, which is said to be the best lac produced in Assam, can be put on to other lac-rearing plants, such as *Ficus cordifolia*, *Ficus elastica*, *Ficus religiosa*, *Zizyphus jujuba*, and *Ficus altissima*. Crops of lac on the *arhar dal* would thus be raised in nurseries in the forest, from which the seed-lac could be put on to the trees in the forest, or distributed to the co-habitants of forest and other villages.[1] The formation of these lac-nurseries is strongly to be recommended in Assam, and, in fact, in many parts of India, with a view to demonstrating their usefulness to the people, and thus improving the methods of collection and increasing the amount available for export. Lac-nurseries, established in the rural tracts

[1] "A very important plant is the Babul (*Acacia arabica*), which bears lac of great value. There could be a very large extension of lac cultivation on this plant, which grows freely in very wide areas in India. On this tree, especially, there could be a very large production of lac on canal banks, on waste land, and wherever this tree occurs. There is immense scope for lands being rendered profitable that are now of little value except as a source of firewood and grazing for goats" (*The Agricultural Journal of India*, vol. 4, Part 3 of 1909).

of our country, and distributing seed-lac to the rearers, will lead to a great improvement of lac culture. But the improvement must necessarily be very slow, as it will take a long time for the illiterate and superstitious villagers to change their present methods of cultivation and collection of lac.[1]

Lac-rearing industry, like many village industries, is almost entirely in the hands of the middlemen, who lend their capital to the rearers. They make advances of money, and get stipulated quantities of the lac, thus realizing twice or even thrice the amount they lend.

Often, however, the rearers enter into contracts with the owners of lac-rearing trees to give them a portion, frequently half the produce.

The sticks incrusted with lac are dried in the shed, by which the wood shrinks, this often leaving the lac as hollow tubes. The lac is then ground in querns, and then sifted with *Chalnis*; the fanning eliminates the light extraneous matter. The lac-dust, called *khud*, is then washed in vats of clear water. The water becomes of a deep scarlet colour, and is allowed to run off, a fresh washing given, and repeated till the washing passes off colourless. The washings are taken up with cotton wool (*alta*), which is in great request among women for dyeing the feet red. The lac-dust, after being washed in vats of water, is sometimes placed in *dhamas*, or closely woven cane baskets, and is rubbed against their sides till the dye is eliminated. The washed

[1] It has been suggested by Mr. Stebbing that the present very insignificant revenue from lac as a minor product can be increased by the forest, irrigation and railway departments of Government. Their subordinates can be trained to work and remunerated by a share in the produce.

seed-lac is golden. The pure seed-lac is used by the *laharis* in making bangles of better quality, while the *khud*, in which particles of dust are mixed, is used for making the ordinary bangles. The pure lac sells at Re.1 per seer, while the ordinary lac can be purchased even at As.2 per seer. Manufacturers of sealing-wax, lacquer-workers, silver and coppersmiths, and potters, like the *la- haris*, also purchase the ordinary crude lacs.

The lac-rearers in the rural tracts of the country generally sell off the seed-lac either to these village artisans or to the middlemen and brokers of the manufacturers, who fuse or tune it into shellac. A quaint and characteristic practice has been seen to be followed in most sales in lac. The buyers and sellers join hands and sit facing each other, a cloth being thrown over the hands. The buyer presses certain fingers of the seller's hand, thus making an offer. This is usually rejected by a motion of the head, and further finger-pressing ensues. Finally, the bargain is struck without a word having been uttered.

There are steam as well as hand-labour small factories. It is stated that though steam-power has been successfully applied to the industry, the hand-labour factories still hold their own, and for some grades produce qualities hardly, if at all, attainable by machinery.[1] Sir G. Watt has pointed out that, in fusing lac with resin in dry heat, great skill is required in knowing when the lac has been cooked to the proper extent. It is, therefore, freely admitted that the hand-made lac possesses certain properties never attained by the steam-machinery

[1] *The Imperial Gazetteer*, vol. iii., p. 173.

factories. Again, in the preparation of shellac, the molten lac is spread into a very thin skin by means of a ribbon of palm-leaf stretched between the hands. In this operation great skill is required in exercising just the right pressure to cause the lac to spread out in a compact sheet of uniform thickness.

Mr. Puran Sing, F.C.S., has discovered a new method of refining lac by the aid of methyl alcohol, which is expected to produce a greater and purer yield of shellac from crude lac than hitherto. A considerable saving of labour, cost of manufacture, and obtaining a larger quantity of resinous principles are expected to make the lac industry much more profitable than it is now. The apparatus employed for the extraction of lac with methyl alcohol is not very costly, and can be easily constructed anywhere at no great expense. The spirit used is not at all lost, but can be utilized several times. Thus, as Mr. Avasia, Instructor of the Imperial Forest College, has expressed his opinion, Mr. Puran Sing's method will not only revolutionize the old methods of the manufacture of lac, but confer a great boon on the villagers who carry on the lac industry by saving them a lot of trouble which they now take in carrying and storing the lac.[1] It will also diminish the inferiority of one kind of lac to another.

[1] Mr. H. M. Lefroy, however, says that the method is full of practical difficulties, and regrets that the process is as yet a purely theoretical, laboratory one, without practical application. He hopes that the author will pursue his researches on a really practical scale, and by showing the cost of producing shell-lac by this means, enable the manufacturer to judge how far he can adopt it, and whether he can really reduce the cost of separating the pure lac-resin from the crude lac.

# CHAPTER II

## APICULTURE: COLLECTION OF HONEY AND EXTRACTION OF WAX

In the hills and forests regular bee-culture is carried on by village artificers. The swarms are gathered from trees and rocks and kept in small boxes under the eaves of the cottages where the artisans dwell. Sometimes bee-culture is established on a much larger scale. Houses are then kept especially for rearing bees. In the rearing houses small recesses are made on the walls and closed on the outside by a wooden panel in which a hole is made. A man is placed in charge of the bee-house. He gives each colony ample room and clips the wings of the queen. He also guards the apiary against insects and animals. Stocking with early swarms is made by capturing wild bees and bringing them to the apiary. The season for making wax is the hot months, namely April to June. The separation of the honey from the wax is usually done in the crudest manner by squeezing the comb between the hands. It is then washed in cold water to further remove honey or other soluble matter contained in it, after which it is placed in a vessel half filled with water and heated over a fire. As a rule no attempt is made to grade the wax before melting, so that the comb containing brood, eggs, twigs, and leaves is

included in the boiling. These separate from the wax when in a melted condition, and are removed by straining the wax through cloth. On cooling the wax is made into cakes or balls. In Assam Naga wax is usually sold in rolls cast on bamboo moulds. A second melting is sometimes given and turmeric powder is frequently mixed with the wax to give it a yellow colour. In a melted state, it is poured into vessels containing a little water, which serve as moulds.

In the plains apiculture is almost neglected. The comb and honey are gathered from the trees only by itinerant honey-gatherers. These are generally a class of Bagdis called Moulays or honey-men, and Bharias, Khunjurs, and Natuas.

A light reed-like bamboo, about twenty feet long, and armed with a reaping-hook at the end, serves to cut the comb from the trees. There is a small net below the sickle which receives the combs. A light cord running through a loop above the head of the gatherer and fastened to the sickle-end of the rod enables him to use the rod as a derrick, which he can raise, lower, and swing to any position. When the net is full the contents are sometimes emptied into a large close-framed basket lined with leaves, which is suspended from a separate cord. The men are covered from head to foot. Their dress cover is smoked in wood-fire, and emits a pungent smell which has a paralyzing effect on bees and prevents them from stinging. More generally two men are needed to collect. One enveloped in a blanket climbs the tree to which the comb is attached, provided with a sickle and an earthen pot. The other man ignites a bundle of grass and leaves and passes

it to the man on the tree who smokes the bees away from the comb, cuts it from the branch, and places it on the pot.

Honey is highly appreciated as an article of food by the inhabitants of the country and also for its medicinal properties. In some parts of the country, *e.g.* in Cashmere and Kuram Valley, honey is used largely in place of sugar for mixing with food and preserving fruits. Wax is largely required by the silversmiths and goldsmiths as well as by brass and copper foundrymen to give finishing touches to the moulds and to be subsequently liquefied and dispelled by the molten metal poured into the matrix. Though honey and wax are procurable in large quantities, they are not utilized fully. The trade in these things has remained almost stationary for many years, though it is capable of great improvement. Attempts to domesticate bees have not been attended with such success as can affect the trade in honey or wax. In Cashmere, the bee is almost domiciled, and nearly every farmer has provision in his house for having the bees, consisting of small hives, often to the number of ten, built in the upper portion of the walls.[1]

The industry has not prospered as it has been left in the hands of the lowest castes or of almost wild tribes. The wax is refined by crude methods. As Mr. David Hooper, F.C.S., F.I.C., has said: "There are in this country vast opportunities of improvement of this industry. The sources of supply might be visited and a study made of better methods for collecting the combs and preparing the wax for the market by more economical

[1] *The Agricultural Ledger*, 1904, No. 7.

processes. A close acquaintance with the habits of the wild bees and the flower they frequent is urgently required, and an enterprise in this direction is almost sure to meet with success." In America apiculture is carried on systematically on scientific lines. Colonies of bees are reared in frames, and stocks are selected. Queens are tested and introduced into hives with great skill. The bee-keeper of America, however, needs but few implements which can all be manufactured in our country at less than Rs.20. With even a limited number of hives, a smoker, a wax executor, and a few queen-introducing cages are necessary, the total cost of which in America does not exceed $5 to $6. The frame and hive most in use in America is that of Rev. L. Langstroth, and this hive, with slight modifications, is generally adopted in England and her colonies. It is also becoming known and appreciated on the continent of Europe. The bellows-smoker now in use has the fire-box at the side of the bellows so arranged as to enable the operator to work it with one hand, and when not in use to stand it upright and secure a draft which would keep the fire snug. One of the most inexpensive devices in America for the rendering of comb into wax is the Doolittle Solar Wax Extractor. This consists of a wooden box usually larger than broad, arranged with legs near one end so that it can be raised up at an angle towards the sun. The interior is fitted up with a concave tin-lining to hold the comb, separated by a wire gauze straining honey from the wax pan at the lower end of the box. The wax obtained by solar heat is of good quality, being clean, never soaked nor scorched, and also light in

colour, owing to the bleaching action of the sunlight. In India, though the price of honey is nearly one-fourth of the price of wax, it is much more profitable to turn the working force to the production of honey rather than wax, taking only as much wax as can be produced without lowering the yield of honey. The honey-extractor with one or two uncapping knives should be adopted, which will enable the apiarist to return the combs but slightly injured to be refilled by the bees after extracting the honey from them by centrifugal force. The cost of this output is nearly Rs.50. The extractor consists of a large can, within which a light metal-basket revolves. The full combs of honey from which the cappings of the salves have been removed by the knife are placed inside the basket, and after several rapid revolutions by means of a simple gearing are found to have been emptied of their contents. The combs are not damaged and can be returned to the hives. The cost of the implements required to run an apiary on modern scientific lines is not very great. To manage economically and conveniently some fifty or even seventy-five hives the cost of the output need not exceed Rs.60. With such a small expenditure the introduction of recent tools and appliances will revolutionize apiculture and transform it into one of the most important of our cottage industries.

## CHAPTER III

### BAMBOO WORKING AND BASKET MAKING

THE bamboo is one of the most useful plants in the country. Amongst other uses of the bamboo might be mentioned rafters, walking-sticks, whip-handles, the manufacture of mats, roofing, sieves, hand-pankhas, umbrellas, chairs, vessels for holding grease and oil, bows, arrows, and cordage, etc. The culms sometimes attain to a height of 100 feet. They are sometimes crooked and knotty, but the *ghorami* or the cottage-builder splits these up, and finds in them all the materials required for the erection and furnishing of a poor man's hut. The *ghorami* weaves the bamboo strips together and constructs a sloping roof of thatch to throw off the rain. Rice-straw and date-palm leaves are laid on the bamboo rafters. He also constructs the walls of a peasant's hut by fastening together the split bamboo and covering them with earth or cow-dung. The *ghorami* sometimes builds the roof of tiles and khapras ; but this is not usual. It is only the wealthy classes, again, who have brick buildings. The *ghorami* is only the builder of a cottage, while the Rajmistri is the mason who builds the houses for the rich.

In the rural districts of the country bamboo weaving is also a very important occupation.



BAMBOO WEAVING

Basket and wicker-work are followed as an occupation by a large number of villagers, various kinds of baskets and bamboo-woven vessels being required for agricultural as well as for domestic purposes. These are all made of bamboo twigs, slips of bamboo, date-palm leaves, or particular kinds of grass. Some of the baskets are made very strong. These are used by coolies for carrying loads, or *rejas* for carrying bricks. Sometimes the bottom of the baskets is so finely woven that they can even hold water. The *dhama* is a strong basket made of rattan. The sieves and kulos are made of bamboo slips. The scale-pan or the *toraju* is made of rattan. Ingenious fish-traps, *bitti*, *tap*, *dohar*, and *genja*, as well as bird-cages, are also made of bamboo. Fans of date-palm leaves are also made largely in villages. In some villages bamboo-working and basket-making, as a consequence of special facilities, attain a high position, and even become artistic and ornamental, as in villages in the Purneah District, and in Patna, Bhagalpur, Chittagong, etc.

Bamboo weaving is left almost entirely in the hands of the lowest classes of the community. The *domes*, who live near the burning ghats, generally carry on this work as a subsidiary occupation. They prepare baskets and other rough works in bamboo, and are largely assisted by their women in the work. They sweep the ground, clear brushwood, and do other odd work. The Bhuimalis, literally the gardeners, have left the degrading occupation of the scavenger, together with that of gardening, and follow this occupation very largely. They act as menials in the houses of the

rich, though they are not allowed to touch water. They wear the tulsi-beads on their neck, and are Vaisnavas. The Bagdis also work in bamboo. It is an usual sight in villages to see Bagdi women fishing in tanks and ponds with small baskets woven by themselves, or gathering in them the *panifal*, the fruit of the lotus plant, or other pond vegetables for sale in the nearest hat. Some of the low-class Muhammadans have also taken to bamboo-weaving as a profitable occupation. These are more skilful workmen, and prepare fancy works for the Europeans, like *moras* or cane-seats, and *chiks* or screens. They also prepare the floor matting and the bamboo hedges, which the municipalities and district boards purchase in large numbers to protect newly-planted trees on the sides of roads.



# CHAPTER IV

## THE FISHING INDUSTRY

FISH is a favourite food of the people. It has been calculated that forty million maunds of fish would represent the proper annual consumption of Bengal, were the supply equal to the demand, which it is not. Thus fish is reared in almost every village of Bengal in the tanks. These tanks are necessities of life in order to supply water, and that they are utilized as sources of edible fish is not only natural and economical, but essential to the purity of water. Nearly eight lakhs of men are engaged in catching and selling fish in Bengal. They are Malas (Jhala), Tiyars (Rajbansi), Kaibarta (Jele), and Karals. Among the Muhammadans they are Nikaris, Chaklais, Mahi-farosh, etc. Besides these fishing castes proper, there are other castes who also take to fishing. Thus among the Bagdis 14·9 per cent. are engaged in fishing. The fishing castes of Bengal are remarkable for strength, nerve, and independent bearing. The finest examples of Bengali manhood are found among them, and their muscular figures astonish those accustomed to the feeble and effeminate inhabitants of cities and towns. Again, a considerable number of men follow fishing as a subsidiary occupation in leisure time. Thus in parts of Eastern Bengal, a boat

and a net are found in almost every house, and these are brought specially into requisition in the rainy season. During the rains whole districts go under water and their inhabitants have to live an almost amphibious life. The numerous and intersecting khals and rivers form the only means of communication between different houses, and fish the most important food of the people. It becomes an usual sight at the time to see almost all the inhabitants of the village engaged in trapping fish throughout the day.

The implements that are used in catching fish are most varied. Indeed, the persistency with which the people pursue fish with every kind of contrivance shows clearly how fish is prized as food. The fishermen use the sieve, drift, drawl, bag and cast nets. Nets are made of hemp and of cotton, and they are steeped in *gab* pounded and allowed to ferment, by which means the net is dyed of a dark brown colour, becoming after immersion in water almost dark. There seems to be a confusion in the minds of the fishermen. They say that the *kapsha jals*, those made of cotton thread, are more durable than *son* or hemp *jals*. Hemp is generally manufactured at home by the *jele*-women with the help of the *taki* or spindle. Sometimes spun thread is bought from other women in the village. Re. 1 would give six to seven chattaks of spun hemp-thread. The nets are woven by the jeles themselves, their women also helping them. There is a proverb that they can weave the nets faster the more furiously they quarrel and abuse one another. Rhea fibre is sometimes spun into coarse thread, three strands of which are again spun together to make

fishing lines, and with the cord of which the *kaijals* are made. The nets are occasionally tanned with *gab*, after a period varying from five to ten days in the working season. The fishermen vie with one another in their ability to preserve the nets. Floats are made of *shola*, or pieces of bamboo, but dried gourds are preferred. Sinkers are made of baked clay or iron.

The following are the common nets in use among the fishers :—

The *phatajal* is a sweep net somewhat elongated in shape with floats made of *phata* or small pieces of bamboo, used generally in tanks to catch small fry. The *phata jal* and the *chabi jal*, which is of the same variety, are very popular in West Bengal. The former usually costs Rs.5, while the latter Rs.3 approximately.

*Jhaki* is the circular cast net. It is usually six or seven cubits in diameter, and is either thrown from the bank of a stream or from a boat. The circumference is drawn up into loops, or rather puckered and weighted with iron. It is folded in the left forearm, while the edge and the central string are held by the right hand. By a sudden and forcible swing of the body the net is cast, and if properly thrown alights on the surface of the water forming a complete circle. On its touching the bottom the fisher slowly draws it towards him by the string just mentioned, and as he does so the heavy weighted edge comes together and no fish can escape. The outcast Bagdi in Central Bengal swings the net round his head before casting it, but no respectable fisherman would dishonour his calling by so doing. The *Uthar* and *gulti* are magnified

cast nets, differing only in size and in the dimensions of the meshes. They are shot from a board placed broadside to a stream, with the net folded on the edge. One man holds the centre rope, while two others gradually unfold and drop it overboard. As the boat drifts the net falls in a circle and is then slowly drawn up. Some of these nets are often forty feet in diameter and a long boat is required to shoot them from. The *Bere* or the sweep net is one, the upper edge or back of which is buoyed up by bamboos, while the lower, or foot, is weighted with iron. Sometimes the net is very long and is shot from two boats fastened together, and when drawn the two wings or ends are slowly brought ashore. The *Bera Jal* is used to catch all the fish in tanks. The bamboos, one at each end of the net, are held by two persons who are on opposite sides of the tank. They move slowly along the banks in the same direction, turning the net upside down when it is bagged. The *Karki jal* is also a sweep net used in rivers, but much smaller than the *ber*. The *Gaganber jal* is often three to four miles long, frequently used in the Meghna. It is the most magnificent net used in Bengal, and its catch often brings to the fishermen Rs.1000 to Rs.2000.

The *Rakkhas jal* is a drawl net, so called because of its large mouth, is lowered down from the boat as it drifts in the stream and catches the fish in its lower lip. The fixed net is used either from the side of a boat balanced by an outrigger, or attached to posts on the banks of rivers. It is attached to the two bamboos which meet at an acute angle in the boat but branching off until they

separate about fifteen to twenty feet. One man stands at the angle and lowers the net into the water, while another sits at the stern working a paddle with his leg until a certain distance has been passed over, when the net which is somewhat bagged is leisurely raised.[1] The *Dharma jal* consists of a square net about five or six cubits in one of its sides. In the centre there is a pouch, and at the four corners there are four elastic bamboo sticks each (about) eight cubits long. The free ends of the sticks are thrust into two hollow bamboo pieces tied together crosswise. A bamboo pole is attached to the cross-piece, one end of which the jele holds by his hands as he sits fishing. This kind of net is used for shallow water, the net being raised all on a sudden when the fish enters it and is finally caught in the pouch.

The *Chandi jal* is a large drift net used in rivers supported by bamboo floats. In the water it hangs as a curtain, the fish being caught in the gills. It is very popular in the Bhagirathi, where it is largely used to catch *hilsa* in the rainy season. The labyrinth jal, *kona jal,* is an elaborate and ingenious drift net with a pouch and side walls, to one of which is attached a guiding net. The pouch and the side walls are kept in position by bamboo poles. During the rainy season when *ber jal* is not used, the *kona jal* is employed to catch *hilsa.* It is priced at Rs.200 or more.

[1] The *Khada jal* is of this type and is extensively used in bils and shallow waters. There is a proverb which is very common and runs thus, "ha-bhate jeler chowra khada." It means that the fisherman has a wide khada net who cries for food; it indicates that the use of this particular net is very common.

Another method of catching fish is the bamboo trap. A cane or bamboo-work is fixed in tanks or on the margin of a river especially where there is a back-water or an eddy. The small fry run into it easily by forcing open the grates, but cannot escape as the ends of the sticks at the entrance project outwards. *Bhanr* is the name of the bigger trap, while the *chore bitti* or *ghuni* (so called in Malda, Hooghly, and Jessore) is the smaller one. Another fish trap made of bamboo slips is the *dohar*. It resembles a hollow sieve, placed on the bank of a river and covered over with twigs. The fish seek shelter in it from the current, and when the *dohar* is raised from the water they are caught. The *polo* is a trap made of split bamboos, extensively used throughout Bengal. It is like a bell jar with a wide bottom and narrow open neck. It is suddenly plunged in shallow water, and the fish found inside is taken out by hand through the narrow opening.

Another trap is the *danp*, used generally to catch *koi*, *magur*, *ghuntel*, *barsha khulsa*, *puti* in the hot months of *Chait*, *Baisakh*. In the elastic ends of a bamboo pole a grass-hopper is attached. As the fish devours it the ends expand and catch the fish in its jaws. This method of catching fish is not very popular. It is believed by the *jeles* that the Devil would suck their hearts' blood if they adopt this foul practice of killing life at the dead of night.

The fishermen use also the rod and the line. But more usually they use the *togi* or *sheresta*. In a long thread attached to a *latim* several *barsis* or hooks are affixed. The fish are caught in the hooks as they devour the oilcakes, rotten *chakli*



FISHING IN SHALLOW WATER

and *dal* as well as insects which cover the hooks. The *togi* is especially useful in the rainy season when the water is deep. The *Chakna* is a small net used for bagging fish when it is caught.

The fishermen also use missile implements. The *Konch* is a bundle of spears of split bamboo, tipped with iron points. Sometimes fish are speared by torchlight. A torch is placed on the prow of a canoe. The fish are attracted by the light in the darkness of the night and are speared with the *tenta.* Again, a drum is sometimes beaten slowly. The *poa* fish are attracted by the sound and are speared when they come near the boat.

The fishermen often work at all hours of the day, but they do not miss the sunrise or sunset and the full as well as the new moon. The fishermen lease a tank and pay an annual rent. Sometimes more than ten of them rent a big *bil*, paying the rent to the landlord in equal amounts. They have to sell all the fish usually to the lessees of fisheries, otherwise they would cancel their lease. These lessees get the fish at a cheap rate and gain all the profits which the high prices usually fetch. Sometimes wholesale vendors of fish intervene between the lessees and the fish-catchers. They become the exacting middlemen. A fisherman once repeated to me a grim proverb full of pathos, which well illustrates the exploitation of the poor *jeles* by these *laoyans* or middlemen: *Jeler parane tena, laoyane kaney sona.* "The *jeles* wear rags, while the *laoyans* or middlemen wear golden earrings."

The middlemen in the fishing industry always constitute a community of higher social status than ordinary fish-catchers. Thus the Nikari in Dacca

and Faridpore, the Chaklai in Jessore, the Dhawa in Malda and Purneah claim a higher social position than the fishermen. Many of these middlemen secure a good fortune and live in brick buildings. The income of the average Calcutta middlemen has been estimated to be not less than Rs.40 a month. The income of an ordinary fish-catcher varies from Rs.4 to Rs.12. The occupation of the fishermen is very uncertain, and on account of the perishable nature of their ware they are naturally at the mercy of the wholesale vendors of fish, who can dispose of the fish much more quickly.[1] Fishermen, indeed, seldom sell the fish themselves. What the middlemen, or vendors, do not take is left to be sold by them. These fish are then hawked about by their women folk in villages, or sold by them in the daily bazars or weekly or bi-weekly markets. These women have such a loud way of articulation and such a complete mastery of the vocabulary of abuse that the fish-market becomes the noisiest place in the neighbourhood for several hours in the morning. In the cold weather fish is sent by train from the principal stations on the Ganges to distant markets. Boats loaded with fish also come from Khulna and Jessore to Dhappa for the Calcutta market. Thus for several months in winter the well-known *bhetki*

[1] The fish supply, as we will see later on, has greatly decreased. Again, on account of the extension of railways and steamers, a large number of the fishing caste who used to ply cargo and passenger boats in rivers has been thrown out of occupation. The occupation of fishermen and that of boatmen being interchangeable, in the slack season the fish-catchers readily take up the work as boatmen. Now on account of the decline in the country of boat traffic, not only is this last resort being destroyed, but a large number of cargomen is reverting to the fishing trade only to make the conditions of the fishermen worse.

floods the fish-market and is found in the hands of many of the clerks returning from the offices.

For the last decade the fish supply has been greatly and progressively declining in Bengal. Not only the Bhagirathi, Jelangi, Mathabhanga, or Madhumati are rapidly declining, but the main stream of the Ganges as well. With the gradual silting up of the rivers the *jheels* and *beels* are affected. These are most valuable fisheries affording shelter to fishes during the dry season and being full of aquatic weeds are not open to free netting, and thus immune from exhausting modes of capture. Not only the *beels* are declining, but the Zamindars of villages who become absentee landlords are also neglecting the village tanks. While the gradual diminution of the fresh-water surface is reducing the fish supply, the indiscriminate destruction of fry and immature fish causes a further fall in natural production. The price of fish has doubled or trebled in the last few years, and this has led to the slaughter of breeding fish and fry throughout the province.[1] It has been suggested that the law should prohibit the capture and sale of fry except for rearing and stocking purposes, and should prescribe a minimum size for the principal carps for sale in a dead state. Protective measures like these have been adopted in the United States and Canada,

[1] In many of the rivers large quantities of hilsa, mostly immature, are caught in spring, and there is regular winter fishing in the Madhumati and in the Hooghly near Kalna, as well as in many parts of the coast. In fact, the capture of fish goes on throughout the year, not even the "spent" fish being spared. The supply of hilsa is thus greatly on the decline, and it is certain that if no remedial measures are adopted the *hilsa* will sooner or later be altogether exterminated (*Quarterly Journal of the Dept. of Agriculture, Bengal*, Vol. III., No. 4).

and if these are in operation in our country their effects will be most beneficial.

Another fruitful source of the diminution of fish supply is the building of *bandhs* or weirs in most of our sluggish rivers. These are usually impassable barriers thrown right across a river with a small passage guarded by a floating bamboo pole. A series of them is often constructed at short intervals along the entire course, and they not only interfere with the free passage of boats, but accelerate the process of silting up. To fish-life the result has been disastrous, as they effectually bar the upward journey of breeding fish, especially of the carp family, to the spawning grounds as well as the downward passage of young ones later on. The damming of channels and streams in this way should be penalized.

In Bengal, the methods of propagation of fish are clumsy. The fry are collected on the surface of shallow water near sand-banks in the rivers with a piece of cloth, and are carried inland remote from the rivers in damp earthen pots to be sold to the owners of tanks. The following are the better known fish that are generally reared: the *coi* or the climbing fish, the *magur*, the *catla*, the *calbaus*, the *rui*, and the *mirgel*, the fry being sold from Rs.5 to Rs.8.

Improvements and new methods that might be adopted in this direction are numerous. A scientific system of pisciculture would utilize our tanks in the villages better than has hitherto been the case, as well as conserve and develop our river fisheries now almost neglected,[1] and yield a fish

1 The Fishery Department in Bengal has been trying to prove whether the artificial culture of carp in ponds, tanks, or other confined

harvest, abundant and continually increasing without any fear of exhaustion. Measures connected with the protection as well as the propagation of fish demand immediate attention in our country, especially in Bengal, where inland waters are so extensive and the fish diet not only highly prized but is a necessity of life.

waters is as practicable in Bengal as it has been found to be in Europe and Japan. In Europe and Japan the remarkable increase in the stock of the carp and other edible fish is chiefly traceable to their culture in ponds and other confined waters, and also to the artificial propagation on a large scale made by means of hatcheries. In America the hatcheries are used not only for stocking ponds, but, what is of special interest to us in Bengal, in systematically replenishing the large rivers and lakes, many of which, by this means, have been restored from a state of exhaustion to one of great abundance, exceeding that which unassisted nature achieved before.

our country, which may thus be regarded as possessing all the elements of food and are not merely luxuries like the sweetmeats of Europe.

The simplest churn is a wide-mouthed bottle or bamboo-joint into which a quantity of milk is placed and shaken in the hand until butter forms. Rotatory churns are also used. The milk is placed in a shallow basin and a whisk is made to rotate on its surface by its handle being rubbed between the hands. At first warm and then cold water are added now and again, but quite empirically. Vertical churns made of bamboos are also found in use. At the end of a wooden rod about a foot in length, two small bamboos or wooden pieces are attached crosswise at right angles to it. The stick is rotated by means of the hands with a string. Those who churn the curd according to the old fashion should observe that in the beginning the number of revolutions should be small. When cream or the surface of the curd cracks and water is added then the revolution should be increased. In this way the butter taken out would be of the best quality. Prolonged churning injures the quality of butter by incorporating cheesy matters with it. It may also be noted that when butter appears on the surface the churning should be again slackened. Observation of this rule will surely increase the quantity of butter yielded.

The *ghee* is prepared by heating the butter until the greater part of its moisture evaporates. The oil rises to the surface, mostly casein forms below as a sediment. Too much heating causes the *ghee* to assume an acid taste, while imperfect heating renders it liable to putrefaction. Great skill is

thus required, but the *ghee* that is sold in the market is usually under-cooked owing to the loss in weight which takes place when fully cooked. The yield of *ghee* from the butter of the buffaloes is greater than from that of the cow. Hence the ordinary *ghee* is principally derived from the buffalo milk. The *ghee* is eaten by the rich every day. It is required for cooking vegetables or for preparing sweets, and is taken uncooked with rice and bread. The poor, however, cannot take *ghee* except on feast days, and are satisfied with vegetable oils.

There has been a continuous and steady decline of the *ghee* industry. The production of *ghee* has diminished a great deal, though the market for milk has widened. The reason for the disparity of the supply of milk and *ghee* is not far to seek. The dairyman can secure a profitable market for fresh milk and butter, but there is at present no profitable market for *ghee*. The following figures will illustrate this. Butter, which is in essence the same thing as *ghee*, sells at prices ranging from Rs.2-8-0 to Re.1-8-0 per seer, according to quality. But the lowest price at which pure *ghee* could be sold at a profit is about Re.1-6-0 per seer. The lowest possible cost of production is higher than what the consumers are prepared to pay for *ghee*.

# CHAPTER VI

## RICE AND WHEAT MANUFACTURE

THE value of rice and wheat produced in India far exceeds the value of all other agricultural products of the country put together.

It is natural, therefore, that the conditioning, husking, and cleaning or the manufacture of rice and wheat is the most important indigenous industry of India. In fact the industry is the most extensive in the country, being carried on in every village.

In the case of paddy the agriculture and the manufacture are not separated. The different processes may be indicated as follows :—

The grain is threshed by being trodden out in the "*Khamar*" or the threshing ground by bullocks. A hooked stick, "*karauli*," is used for pushing the sheaves under their feet. The bullocks are tied by ropes to a stake, *nihi*. The straw that has been threshed is called the *nara*, and is the ordinary food for cattle. The straw is not trodden, but tied up in bundles, and the heads are beaten against a block of stone or wood (the *pat*). When the grain is thus separated, the straw is used in thatching cottage roofs.

The paddy is dried in the sun, and is then sifted by means of *pechas* and *kulas*, woven of bamboo slips. The paddy is then soaked in water. The



'SKING GRAIN.

balls of mud, bits of stick and straw float on the surface of the water and are thus separated from the paddy, which sinks to the bottom of the vessel. The paddy being thus further cleaned undergoes the process of boiling. The paddy is boiled only partially, the rice is thus rendered wholesome. Sometimes the rice is not boiled; it then becomes ready for the next process, that of being dried in the sun (*attob* rice). Boiling and drying help the husking process a great deal. Boiling inflates and drying contracts the grain, thus the husk is partially released. Drying alone has this effect to a very slight extent. Unboiled paddy takes about three hours and boiled paddy about five hours to dry in the sun. The paddy is then ready for the husking operation.

The process of parboiling is the most laborious and difficult to regulate. When the rice is over-boiled it would be reduced to dust in the process of husking, and would sell very cheaply. The consumption of boiled rice is more extensive than that of unboiled rice, the latter being used mainly by the poor and Brahmin pandits and widows.

There are two indigenous methods of husking grain. The *dhenki*, or the lever, is a movable beam which rests on two pillars, and works on an axle. A woman standing at the further end of the heavy beam alternately rests and removes her weight from its extremity. The beam alternately rises and falls, the peg in the other end of the beam crushing the rice placed in the hollow wooden bowl on which it falls. Another woman sits near this and stirs the grain and removes the husk with the hand as soon as the peg rises. Sometimes there is a hand-rail

which serves as support to the woman who works at the pedal. Instead of the *dhenki*, the *hath*, *mashuli*, or the *ukli* (udhkhal, Sans.), or the pestle and the mortar are often used for the same work. There is an iron ferrule at the bottom of the pestle to prevent it splitting. When paddy is husked it is called brown rice, owing to the brown below the husk which now appears. The removal of this coating is the next process in which there is more friction applied than pressure. When brown rice has been cleaned it is known as white rice. The rice is then ready for purchase, but the people always fan and wash the rice again before consuming it.

The method above described is extremely crude, tedious, and expensive as compared with that followed in America and Rangoon. It does not even yield a clean produce. The cost of manufacture has been estimated to be about 7 annas per maund for boiled and 6 as for unboiled rice. The working time required by one person to prepare a maund of boiled rice is about twenty-one hours. The average cost is 6½ annas, which also coincides with the rate paid to hired workers for rice preparation in certain parts of Bengal, which is generally 6 annas per maund of rice, the worker retaining the half a maund of husk which may be valued at half an anna. These workers, "*bharanis*" as they are often called, are sometimes in great request in the country. The cost of manufacture varies mostly with the quality of rice wanted, whether boiled or unboiled, polished or unpolished. In coarse paddy, the cost is somewhat lower than in fine paddy. The average cost mentioned before is for medium qualities only. It

has been estimated that a maund of medium quality of Bengal paddy would yield about twenty-six seers of rice, thirteen seers of husk (*thoosh*), and one seer of meal (*kuro*), the yield of rice increases slightly in coarse paddy and diminishes somewhat in fine paddy.[1]

It is a matter of regret that the staple food of the country is manufactured in a method which involves much waste of time and of labour. This waste, however, is inevitable, as long as the manufacture is not separated from the agriculture of the crop as in the case of wheat. The real reason why rice is as a rule conditioned and husked by those who grow it, is to be found in the cheap labour of the country. Indeed, the Burmah rice-mills had their origin in the very high cost of labour in that province, and the disinclination of the Burmah agriculturist to undertake any work he can avoid on account of the dear labour. It soon became evident that if rice is to be an important article of export, it must be conveyed to Rangoon as paddy and husked there cheaply by means of machine. This gave rise to the important rice-milling industry in Burmah. The question of the disposal of the husk, however, then became a serious one. The discovery soon followed that the husk, previously wasted, might be utilized as the fuel to drive the mills. The husk is accordingly conveyed by special contrivances to the furnaces, and there consumed while a stream of water flowing below carries off the ash. By these and other inventions so great economies were effected, that it soon became evident that

[1] *Vide* Mr. H. Ghoshe's paper on "Rice Manufacture," Industrial Conference, 1906.

not only was a great export trade possible, but that it would no longer pay to carry rice in husk to be milled at localities remote from the areas of production. By 1904 there were 114 mills established in Burmah.

In the mills in Rangoon the process of separation is effected in the case of unboiled rice by a set of sieves circulating in one plane and requiring but very little power to drive. When boiled rice is wanted the separation is brought about by specific gravity in the soaking process. Boiling can be done far more easily than in the indigenous method by a boiling apparatus when steam is introduced by means of a pipe. No water will be needed and decidedly better results will follow. The indigenous process of drying the paddy in the sun requires a long time and is very tedious. Hot air has been used in a few mills, with great success, to do the work. It cannot be said that the machines are too costly. Though they are beyond the capabilities of the ordinary individual cultivator, they are well within the means of a comparatively small zamindar. The rapid development of co-operative societies, again, would place the cultivator in a better position to purchase expensive but better machines than had hitherto been the case. And, in spite of their cost, it has always to be remembered that a good machine, though expensive at the start, is far more economical in the long run than a cheap one. Some of the rice-milling machinery, however, are cheap. Messrs. Nagel Kaemp, Hamburg, exhibited one such in the U. P. Exhibition, Allahabad (1910–11). They claimed that the Filpina and Colonia mills shown at work together with their patent

paddy separator, would place the small producer in a position to compete with larger installation, and they would turn out the highest grade of polished rice with comparatively cheap machinery. Messrs. Ransomes, Sims & Jefferies and other companies also exhibited in the same exhibition several steam threshing plants which they believe to be suitable for India, and a few of them were fitted with bhusha-making apparatus. The official handbook makes these remarks: "It is contended by the designers of these machines that the *bhusha* so made is even superior to that obtained by the ordinary indigenous process. Steam threshing machinery, however, appeals to only a limited number of large zamindars, and to conditions where it is possible to collect a large quantity of unthreshed wheat, or rice, within a comparatively small area. The hand- and bullock-power threshing machines, which are exhibited alongside, are within the capacities of many comparatively small landowners. One advantage of using threshing machines is that the grain is put on the market more quickly and in a much clearer condition than is possible when trodden out by bullocks."

In the system of rice-milling machinery described above, it has been estimated that the cost of rice manufactured per maund would be approximately 2 annas 6 pies for unboiled and 3 annas for boiled rice, unpolished rice, such as would be consumed in the country. Rangoon millers reckon an average of 3 annas as the cost of preparing polished rice. If the system of artificial instead of natural drying is introduced, the cost of boiled rice should be reduced by 6 pies approximately. Thus the introduction of the up-to-date system of machinery

would diminish the cost of manufacture of rice by about 4 annas per maund. The price of the staple food of the people will be reduced to more than one-third, and a vast amount of time and labour will be set free for other industries.

In Bengal, and in the deltaic tracts and rice lands generally, where grazing lands are limited or totally wanting, *bichuli*, or dry rice straw, is the only fodder available for cattle in any quality. It is believed that green food is not suited to working cattle. Rice straw is also worked up into fancy baskets. Mats called mandri, phindi, as also string, are made of rice-straw in many places. Mr. Collins, in his Report on Arts and Manufactures, Bengal, 1890, says that in the Patna and Bhagalpur divisions fancy baskets of coloured grasses are made by high-caste ladies. Fancy straw baskets are made in Purnea district. The straw (even the stubble and roots) may also be used in paper making. The *thoosh*, or husk, is utilized in boiling paddy making, or charcoal for the chilam. The potter has sometimes to use the husk to make the clay sticky, especially in moulding pratimas, and the mud walls of the huts have also the husk mixed with clay. A dye is also made from the husk.

The *kuro* and the *khud*, or the small particles of rice rejected in the cleaning process by the kulo, are eaten by the very poor, or given to the cattle.

The edible grain may be said to be of two grades—the finer qualities, or table (Patna) rice; the lower grade, suitable for distillation or for the manufacture of starch. The rices of Burmah are employed for distillation (and for that purpose very largely go to Holland and Germany), and for

conversion into starch (mainly to England). They are thick, coarse, highly glutinous rices, and when boiled assume a heavy and somewhat repulsive appearance to persons not accustomed to them. Such glutinous rices are, however, much prized in the manufacture of cements. A special Indian cement is made from the water in which rice has been boiled mixed with a quantity of pure lime.

In the case of wheat, unlike that of rice, the manufacture is separated from the agriculture, the grower does not prepare the corn. The indigenous process is that of grinding the corn by the hand-mill. The bigger kind used for milling wheat is called the *janta*. The upper lid is so heavy that it is worked by two persons, one sitting in front of another on the other side. The *janta* is made to revolve in an axle by the handle. The smaller kind used for breaking the pulses is not so heavy. It is called the Chakki, and worked by one person. From the wheat grain three kinds of flour are made in the *janta*, viz. *shuji*, *maida*, and *ata*. The first is a granular meal obtained by moistening the grain over-night and then grinding it. The fine flour passes through the sieve, leaving the *shuji* and the bran above. The latter is got rid of by improving the *shuji* grains. The preparation is most easily pro-duced from the hard wheat rich in gluten. It is employed in confectionery, the *haluai* being found in every confectioner's shop. *Maida* and *ata* are prepared from the flour separated in the preparation of *shuji* by regrinding it and passing it through a finer sieve than used formerly, the fine flour that passes through being *maida* and coarser *ata*. They are, however, most largely prepared without going

through the process of separation of *shuji*, the dry grain being at once ground and sifted into the two qualities. *Maida* and *ata* constitute the chief food of Upper India, the former being the luxury of the rich, while the latter is the flour of the poor. In many localities the *ata* is not obtained from pure wheat, but from a mixture of barley and wheat grains, the two grains being ground in a mixed form, a habit that has led to the cultivation of the mixed crops, and also to the sale of the mixed grains. The flour is used in the production of certain sweetmeats in villages. In towns, bread and biscuits prepared from flour are greatly in use. Several biscuit factories have been started in the country and show great promise. There is also the indigenous baker who prepares bread from flour leavened and baked in his oven. He uses a wooden spoon and an iron bar hooked or flattened at the end.

In addition to the indigenous hand-grinding methods which are found all over India, there have been established in the country several flour-mills which are run on modern methods. In 1906, there were forty-two such mills, employing 3000 persons, in the country, which were distributed thus :—Punjab twenty-one, Bengal nine, Bombay four, United Provinces four, Madras two, Sindh and the Central Provinces one each. In some cases the villagers have also been known to use the water-driven flour-mill where a fall in the water level can be obtained, especially in the hills.

By far the major portion of the flour annually produced in the country is turned out by the indigenous hand- or water-power mills, and thus

escapes registration. No more particulars can therefore be afforded of the consumption of flour than are implied by the annual production of wheat and the balance of that cereal over and above the foreign exports. The trade in exporting wheat-flour is not very profitable. In 1913–14 it was 1,588,000 cwt., with a value of Rs.12,511,000.

## CHAPTER VII

### SUGAR INDUSTRY

INDIA is the largest single producer of cane-sugar in the world, and the importance of sugar in our village economy is very great and dates from the earliest times. Sugar is the only luxury that is within the reach of the poor in our rural tracts,[1] and the demand for it in the country is continually increasing, year after year. Up to the last decade India manufactured only juggery and very crude sugar to meet the wants of her people. Now the demand for refined sugar is supplemented by an increasing demand for refined sugar which she cannot produce alone herself, and which she has to import in large quantities. Indeed, "the power of India to absorb immense quantities of crystallized sugar in addition to the cruder sugar of her own production becomes increasingly striking year by year. The increasing demand for crystallized sugar suggests a degree of preference that may well account for the continuous decline in the acreage under cane in this country. Ten years ago imported sugar formed only 59 per cent. of it. The increase of sugar from internal production has fallen by about 409,000 tons. As time goes on the

[1] It is said that the *per capita* consumption of sugar in India is 35 lbs.

conviction gains ground that the decline in Indian cultivation of sugar is real and continuous, and that there is probably an excess between it and the growth of imports. Price records show that in sixteen years the prices of food-stuffs in India have risen by 32 per cent. The price of Indian crude sugar, known as Gur, has risen only 26 per cent. In other words, sugar has not fully shared in the appreciation of other food-stuffs, and it is difficult to dissociate this fact from the circumstance that the world's price of, say, Java sugar has declined in the same period by 25 per cent."[1] It is recognized, however, that India is not inferior to other countries as a grower of sugar-cane. Dr. J. W. Leather has remarked: "There is no need to go outside India for good varieties, or to other countries for good methods of cultivation. The best varieties are met with, and the methods of cultivation in some parts are very perfect. What is wanted is the introduction of these good varieties and good methods into those parts, particularly the North-Western Provinces and Behar, which provinces, it must be recollected, include much the largest area under cane of any province of India. The real causes of the decline of the industry have thus been pointed out: India's potentialities as a sugar producer are hampered by the small and scattered nature of the holdings, the impracticability, except perhaps in new assignments such as the Canal Colonies, of concentrating cultivation round a central factory, and the peculiarities of demand which as to four-fifths of its volume is restricted to molasses and low-grade sugars,

[1] Noel Paton's "Review of the Trade of India, 1910–11."

produced by wasteful and primitive methods, and commanding prices out of proportion to their refinery values."[1] Indeed, the sparse distribution and defective cultivation of cane, together with the petty scale and inefficient methods of the indigenous industry are the antitheses of the practice, exemplified by the "Central Factories" that have been gradually adopted in competing countries, and they result in losses, possibly sufficient to account for the discrepancy of cost.[2] Thus it has come about that though India's share in the world's total cane-sugar is 34 per cent. and cane-sugar[3] — India's included — represents about 52 per cent. of the world's total sugar supply, yet India at the same time imports largely increasing quantities amounting to 10 per cent. of the total supply of cane-sugar outside India. In 1913–14, the imports of cane-sugar amounted to Rs.12,89 lakhs, and beet-sugar Rs.1,40 lakhs.

It has been maintained that were modern machinery installed in the place of the antiquated conglomeration of wheels and rollers at present to be met with, the sugar production of India could be doubled with little or no difficulty, and India's ancient place as an important sugar-exporting country restored to her. Thus the introduction of the Central Factory system as is followed successfully in Java, Mauritius, Formosa, or Hawaii, is regarded as the sole remedy of the present condition of the industry. But there are obvious difficulties in the introduction of the Central Factory which are

[1] C. W. E. Collin's "Review of the Trade of India, 1909–10."
[2] F. Noel Paton's "Review of the Trade of India, 1910–11."
[3] The chief sources of cane-sugar are Java and Mauritius, while in respect of beet-sugar Austria has uniformly retained the first place.



GUR-MAKING.

almost insuperable in many parts of our country. A continuous and large supply of sugar-cane at one centre, which a Central Factory will require, cannot be easily organized.

It will not be expedient for the manufacturers to secure a few contractors producing on a large scale, or to conduct agricultural operations themselves. The growing of sugar is distinctly a business for the small farmer, and it is very questionable whether any company can produce sugar as cheaply, even under the most favourable conditions, as can the individual grower with a smaller acreage, and consequent closer supervision of work. With the least laxity in supervision it becomes a very easy matter for a company to lose in the field all that is really made in the factory, and the manufacture of sugar forced to bear the burden of the field losses.[1] The economic production of sugar in the field is a far more complicated matter than the extraction of it in the factory. Thus the agricultural operations have to be left in the hands of the people themselves. The sugar-cane tracts are usually so scattered, and each cultivator sows such a small area that the factory has to deal with a very large number of small cultivators. If any of these men fail to supply the factory with the required number of canes the mill has to be stopped, and there will be a very serious loss. For the factory cannot keep a reserve stock of sugar-cane, because it deteriorates rapidly as soon as it is cut. Thus the difficulty of obtaining the supply of sugar-cane is so great that under

[1] "The California Sugar Industry," by G. W. Shaw, M.A., Ph.D., Bulletin No. 149, University of California publications.

these conditions, we can say that the sugar industry will not in the main develop on the lines of the Central Factory system, though there might be particular localities where sugar-cane grows abundantly and where the system can be worked to a profit.

It has been suggested[1] that the Central Factory instead of manufacturing sugar directly from the sugar-cane, might produce it from *Gur*. Such a process is considered to be more easy and profitable. *Gur* is available in large quantities, and can be transported from considerable distances and stored; in *Gur* business the factory can work all the year round, whereas in cane business it only works for three or four months. Besides, the machinery used in *Gur* business are very few as compared with that used in cane business. But this system has also its difficulties.

*Gur* as a starting point for sugar-making is admittedly scientifically unsound; the loss of sugar during the manufacture of *Gur* is very high indeed, and it is at the best an indifferent material for sugar refining. The price of sugar in the Indian market apparently bears little relation to the price of imported sugar or to its own sugar contents; the higher priced *Gur* prepared for eating purposes are so dear in proportion to their sugar content that they are entirely useless for refiners. Again the Indian market values *Gur* partly by the grain or texture, that is the amount of sugar-crystals present in it, and partly by the colour; the refiner cares

[1] The internal trade in sugar is divided into two sections, (*a*) refined and (*b*) unrefined sugar. The grand total of the movements of the former kind came in 1906-7 to 5,984,425 cwt., the traffic in unrefined sugar came to 9,420,832 cwt.

nothing whatever about the colour but looks only to the amount of crystals.[1] Now to get a large proportion of crystals, it is necessary to add lime to the juice when making *Gur*; and the addition of lime usually makes the *Gur* almost black and quite unsaleable in the Indian market. So if you lime your juice, you can sell only to the refineries, and if you do not lime, the refiners will not buy.[2] Thus as long as *Gur* continues to satisfy a large proportion of the demand for sugar, the refining industry is handicapped at its very beginning.[3]

The refining industry might adopt one alternative. It might work on cane during a portion, say, one-third of the year, and on *Gur* during the two-thirds. Such a combined factory will work at a relatively low rate of profit during two-thirds of the year and at a higher rate during one-third. Central Factories will then be gradually brought into existence. When these are established it will pay manufacturers to offer to crush cane such a price as will lead to the abandonment of *Gur*-making. When foreign capital came to be used, cultivators at Porto Rico found it more profitable to sell their cane than to work it up by the old process.[4] Under similar conditions, *Gur* available

[1] "The United Province Sugar Industry," April, 1907. Paper read at the first United Provinces Industrial Conference.

[2] The manufacturer in the factory will seek to get as large a proportion of crystals in the *Gur* as possible. If a method of *Gur*-making is suggested which will produce more crystals without sacrificing the colour as the addition of limes does, the difficulty is obviated.

[3] The Cossipore Sugar Factory in Bengal, which consumes Gur and produces sugar and molasses, and the Central Sugar Works, U.P., which also do the same labour under this difficulty.

[4] "Sugar-cane and Sugar Industry in India and Other Countries." Paper read at the Industrial Conference, Calcutta, 1912.

for refining in India will tend to become more rare and cane will be offered in its place. It is, however, doubtful if the transformation of the public taste can be expected very soon though it has already begun in many parts of India.[1] In Bombay now-a-days the better classes of people prefer the white sugar to the usually locally produced juggery or to the brown Mauritius, and for such white sugars they have to look to the countries producing white qualities such as Austria, Germany and Java. These white sugars, imported through Bombay, find their way to Gujrat district, viz. Surat, Ahmedabad, and on the Great Indian Peninsula line they go as far north as Delhi. In the United Provinces the demand for *Gur* has greatly diminished when refined sugar imported from Java and Mauritius can be had at cheaper rates. Thus economic causes have been modifying the tastes of the people, and it is not impossible to find the demand for *Gur* in our rural tracts gradually disappearing on account of the low prices of refined sugar. Nevertheless the existing demand is still mainly restricted to *Gur* and low-grade sugars, manufactured in the country. Thus in the rural tracts, *Gur* being generally preferred to refined sugar, the average price of *Gur* has for some years past been higher than that of sugar. So long as the public taste remains as it now is, and the relative prices of *Gur* and refined sugar do not greatly change, there is no profit to be made by refining sugar, and sugar

[1] Mr. Barber, Government Botanist, Madras, has suggested that every effort should be made to encourage such a change, for the production of sugar on a large scale for the local market instead of *Gur*, for this would pave the way for India to become a large sugar-producing country, and the question of export will naturally follow.

will continue to be manufactured according to indigenous methods.

Under the indigenous system the cultivators of sugar-cane are in most cases the manufacturers. In the large sugar-cane tracts, the cultivators have their mills at the depôts to crush the canes. The canes are peeled in the fields and are taken on bullock carts or head loads to the depôts, which, attracting swarms of young children of the village, become busy centres of life during this sugar manufacturing season.

There are three kinds of mills in use for crushing sugar-cane: (1) The *Ghani* or wooden mortar and pestle mill, the same as is used in crushing oil-seeds, but instead of the up-and-down motion of an ordinary pestle, the pestle is rolled against the sides of the mortar by a lever attached to it. (2) The *Chaki*, consisting of two horizontal wooden rollers with screws fitting into each other. (3) The iron mill. The iron mill is now commonly used. Thus, in Eastern Bengal and Assam, the iron mills appear to have completely supplanted the wooden mill in all the districts of Rajshahi Division, and in the districts of Faridpore, Bakarganj and a greater part of Chittagong Division and Cachar. The Nepalese cane growers of Assam also use iron mills, though among the Assamese cultivators the use of the wooden roller mill is still all but universal. The earlier type of iron mill with two vertical rollers, is slowly giving way to three roller mills which are more effective. The cane juice is collected in a huge earthen vessel called the *Patna*. Sometimes two or three vessels with ropes tied to them are employed; when one of them is filled up, the second

is put in its place, and then the third. This is a precaution against the fermentation of sugar in the unclean earthen vessels dug up into the earth. A piece of cloth or a bamboo basket is placed on the mouth of the *Patna* for straining the juice. As soon as the *Patna* is full the juice is removed to *Karahis* or boiling kettles placed on the furnace. The *Gur* manufacturer sits on one side of the structure and makes the fire with bamboo sticks, dried *arhar* twigs or palm or cane leaves. There are usually three or four *Karahis* on the furnace, which, being connected with one another, are fed with the same fire, the juice as it thickens is brought from one pot to another close to the furnace mouth. The process of converting the scum into a valuable cattle food has been thus described in a pamphlet published by the Bombay Department of Agriculture: Mix an equal quantity of water with the strained scum and boil the liquid in a *Gur* pan. Any rejected pan will do. As soon as it boils, fine powdery *megass* should be mixed with it in proportion of one point of *megass* to four of the original scum. The whole mass is stirred and the fire then stopped. Then it is spread in the sun till thoroughly dry. The scum meal thus prepared from the refuse of one *Gur* boiling furnace is quite enough for all the bullocks required to work the mill supplying that furnace. The scum is mixed with the *shani* and given as food to the bullock. Small quantities of milk diluted with water and mustard oil are added during the process of boiling to assist, and the scum is removed with the Labari, a broad ladle. The *Karahi* is taken off the furnace when the syrup is quite thick, and assumes a dark

brown colour. This is the *Gur* of the ordinary market.

The *Gur* is (i.) sold to tobacco dealers to mix with tobacco; (ii.) boiled down to hard mass and sold as a sweetmeat; (iii.) sold to the spirit makers; (iv.) or it may be more profitable to reboil to *rab* and centrifugalize again. Thus a second crop of white sugar is often obtained in the United Provinces, and there are still molasses left over which for the purposes of the tobacco trade, is not as good as before. Most of the first molasses in this kind of factory are reboiled to *rab* and extracting a second crop of white sugar, a very big mass is said to be made. The following figures have been given :—

| Expenditure | Rs. | A. | P. |
|---|---|---|---|
| 1. Value of 47 mds. of molasses | 78 | 6 | 0 |
| 2. 2 boilers for two days at 6 as. per day | 1 | 8 | 0 |
| 3. 1 fireman for 2 days | 0 | 6 | 0 |
| 4. Fuel | 3 | 0 | 0 |
| 5. 26 gharras for *rab* | 1 | 12 | 0 |
| 6. Centrifugalling charges | 10 | 0 | 0 |
| Total | 94 | 10 | 0 |
| **Income** | | | |
| 9½ mds. of sugar | 85 | 8 | 0 |
| 28½ mds. molasses | 47 | 0 | 0 |
| Total | 132 | 8 | 0 |

*Rab* produced is about 80 per cent. of weight of molasses, therefore yield from 41 mds. = about 38 mds. of second *rab;* 38 mds. *rab* at 25 per cent. sugar = 9 mds. 20 srs. sugar, and 28 mds. 20 srs. molasses (*Agricultural Journal of India*, Vol. VIII., Part I., p. 110). The average out-turn of *Gur* from a bigha of land is 27 mds.

Mr. H. E. Annet tells us from his experience in a village in Jessore District, Bengal, that about

20 *pucca mds.* of *Gur* per bigha (of one-third acre) was the usual yield, but that 30 mds. was usually obtained. An area 16 feet by 25 feet in the cane field was measured out. The average distance between the rows was 2 feet 8 inches, and on this area there were one hundred and seventeen stalls, fifty-two of the stalls contained one hundred and fifty-six canes, *i.e.* an average of three canes per stall, a total of three hundred and fifty one canes in the area. The number of canes in a stall varied from one to five. Fifty stripped canes were found to weigh 45 lbs. 8 ozs. an average of 0·91 lb. per cane. So that the total weight of stripped cane in this area was 319 lbs. 5 ozs. This comes out at 15·5 tons per acre of stripped cane. Each fourteen parts of juice gives about three of *Gur*, so that the yield of *Gur* per acre works out at about 2·2 tons.

The following represent the cost of the manufacture of *Gur* as given in a report on the sugar-cane industry submitted by the Agricultural Department, Bengal, to the Board of Agriculture, India:—

| | Rs. | A. | P. |
|---|---|---|---|
| (*a*) 5 men to cut and strip canes . . . . . . | 1 | 4 | 0 |
| 1 man attends to the furnace . . . . . . | 0 | 4 | 0 |
| 1 man boils the juice . . . . . . . . . . | 0 | 4 | 0 |
| 1 man fits the mill . . . . . . . . . . . | 1 | 0 | 0 |
| Total . . . | 3 | 0 | 0 |
| The work is extended for 4 days . . . . . . | 13 | 0 | 0 |
| Fuel . . . . . . . . . . . . . . . . | 0 | 8 | 0 |
| Hire of the mill and pan . . . . . . . . | 4 | 0 | 0 |
| Rent . . . . . . . . . . . . . . . . | 4 | 0 | 0 |
| Total Rs. . . . . | 21 | 8 | 0 |
| (*b*) Cost of cultivation for a bigha of land yielding sugar-cane . . . . . . . . . . . . . | 53 | 2 | 0 |
| Calculated total . . | 74 | 10 | 0 |

| | Rs. | A. | P. |
|---|---|---|---|
| (*c*) Out-turn 24 maunds of *Gur* at the rate of Rs.4 a maund . . . . . . . . . . . | 96 | 0 | 0 |
| Sugar-cane tops . . . . . . . . . . . | 18 | 0 | 0 |
| Total . . . | 114 | 0 | 0 |

(*d*) Profits Rs.39-6-0 per bigha or Rs.118-2-0 per acre.

The manufacture of *Gur* is perhaps the best example of the application of co-operative methods in our rural tracts. The fact that the sugar-cane growers are in one locality where the large contiguous acreage makes the average of supply of cane juice large in amount, contributes to develop the spirit of co-operation. In the villages we usually find that the cultivators who grow sugar-cane own one or two cane mills together.[1] The canes are not allowed to lie in the fields for long, but are crushed as soon as they are cut. Each of the cultivators has a pair of bullocks which drives the mill by turn. All the cultivators are engaged in the work ; some assist in the boiling process, one taking out the scum in one Karahi and another stirring the liquid in another pan, while others control the fire in the furnaces or are engaged in crushing the sugar-canes. Thus all the economies resulting from a manufacture on a comparatively large scale are effected without any initial outlay,

[1] If the cultivators do not own the mill themselves they hire it and pay, say Rs.1 per day's work of the mill. Sometimes, however, a rich cultivator owns a mill and offers to crush the sugar-canes and turn the juice to *rab* on receipt of a fixed money payment from the other growers. Thus he will charge Rs.10 to crush one bigha yield of sugar-cane and turn the juice into *Gur* with his own men. Often, however, they charge a rate, say 4 annas, according to the quality of juice.

while the sugar-cane growers—themselves the manufacturers—are pretty sure of their out-turn.

The indigenous process of sugar manufacture can be improved in various ways. The following are some of the improvements that are suggested: (*a*) The use of tin canisters instead of earthen vessels for storing the cane juice. Experiments in Mysore show that losses from fermentation, due to the use of dirty receptacles, amount to about 10 per cent. of the sugar in the juice. The discarding of earthenware pots, and the use of iron or copper receptacles, combined with cleanliness, would prevent a considerable proportion of this loss (Proceedings of the Board of Agriculture in India, Cawnpore, 1907). (*b*) The use of the cast-iron Karahi which is all one piece throughout, instead of the pan made of many pieces of iron riveted together. (*c*) The furnace should not be straight and deep, but wider in the sides. Attention paid to a few simple details about which the cultivators are careless will lead to a great improvement of the quality of *Gur*. Thus, in the Burdwan and Sibpore experimental farms, the same appliances as are used by the neighbouring cultivators are used, yet the jaggery is of excellent quality. The juice is received in pots which are clean and sweetened every day; and as soon as the pot is full, the juice is poured into the boiling pan, and kept sufficiently hot to prevent fermentation until the full charge has been collected. The pan used is made of iron, and is of the shallow circular type now used in many parts of Bengal. The pan is so placed over the fire that its outer six inches or so projects beyond the furnace, preventing the burning of the jaggery as it thickens in the pan.

After the juice has been clarified, and the first scum that rises has been removed, the boiling is pushed on as fast as possible. The simple method which entails no additional cost can be further improved by defecating the juice with the half of such substances as soda and the extract obtained by crushing the stem of the *Vindi* plant.[1] Mr. Mohammed Hadi, Khan Bahadur, has introduced several improvements [2] in indigenous manufacture. His processes for the manufacture of *Khand* and refined sugar from cane juice are within the reach of small capitalists, and by their use sugar can be produced of better quality than existing India sugars, and at considerably lower cost. They are well adapted to co-operative methods, if the sugar growers of a given area would combine and set up a factory on Mr. Hadi's lines for production of sugar from their cane.

The introduction of the centrifugal instead of the Khanchi for preparing sugar from *rab* was probably the first improvement introduced by the Hadi process, and this part of the process has already been

[1] Mr. Basu, "Report on the Sugar-cane Industry of Bengal."

[2] "Improvements in Native Methods of Sugar Manufacture," Bulletin No. 19 of 1905, U.P. Department of Agriculture: "The way to make the *rab* was evolved by experiments with successive modifications of existing methods, (1) The pans were arranged so that juice could travel by gravity instead of having to be lifted; then copper was substituted for iron in the pans, the greater cost of raw material being almost covered by simplification of the construction; further, the arrangement of pans over the furnace had to be worked out in detail. So that each pan should get the temperature it needed and that fuel should be economized; while, lastly, the infusion of the stem of the wild *hibiscus* together with crude soda sulph. (known as Sajji) used in small quantities were the best materials for defecation."—*Agricultural Journal of India*, Vol. II., Part I., 1907. W. H. Moreland, "Sugar Industry in the United Provinces."

initiated by the *Khandsaris* in the United Provinces using the *Desi* process who have not yet adopted the improved methods of evaporation. But perhaps the most important improvement that is required is the introduction of efficient cane mills for bullock power. There are several types that are suitable, which might be immediately introduced. Mr. Moreland has suggested the establishment of an agency which will let their mills on hire to the cultivators, in all the sugar-growing tracts of the country, at a rate that would include maintenance for the season. The mechanics could be employed in visiting periodically each mill that had been hired out, in adjusting the bearings and otherwise seeing that every mill was in thorough working order. Power-crushers might be introduced were a sufficient area of cane to be obtained; for even the least small bullock mill cannot avoid the loss of juice. In the U.P. Exhibition, Allahabad, 1910–11, Messrs. Blair, Campbell & Maclean exhibited at work a small complete English Sugar Factory, equipped with all the apparatus for economical crushing and vacuum evaporation. At the same time it produces only 1½ tons of sugar every twenty-four hours, thus requiring from fifteen to eighteen acres of cane per day, which can easily be obtained from one acre. In other words, such a factory in order to work day and night for one hundred days would require one hundred acres. Thus the factory "represents the latest efforts to provide a factory on modern lines, but which is small enough to deal with quantities of cane such as are likely to be available within a reasonable radius." The establishment of such factories in the important cane districts

of the country will be found to be a commercial success.

The sugar-cane cultivators, however, have another great drawback in common with the agriculturalists, which has stood in the way of the development of the sugar manufacturing industry. Many of them are in debt to the Mahajans. The cultivation of cane is rather difficult and expensive, and so the cane growers often borrow money from the Mahajans, pledging to pay them back in seers of *Gur*. These Mahajans are generally the sugar refiners who find it to their advantage to lend money to sugar-cane growers. They thus become certain of the regular supply of *Gur* from their creditors during the season, while getting the rates of interest for their money. The *Gur* is usually charged at rates when it just comes into the market early in the season. One cultivator said to me that he had no inducement to refine the *Gur*, as that would mean a less weight and consequent less deduction from the loan by the Mahajan who seems to disregard the quality of the *Gur*. In some tracts of Behar, the cultivators have to give up the *Gur* before the *phalguni purnimah day*. If they do not, the Mahajans will either go to the court or charge a higher rate of interest and deduct the *Gur* at lower prices. Thus the cane-grower, after his cultivation and manufacture of *Gur*, finds that he has but little profits. The only remedy for this is the introduction of the co-operative credit societies among the growers. The adoption of co-operative methods in the manufacture of *Gur* has already been noted. If co-operation extends to cultivation, the industry will receive a great stimulus.

We have hitherto been dealing with cane-sugar industry. Date-sugar manufacture is another important village industry. The date-palm is cultivated systematically like the staple crops of agriculture in some tracts. The ground generally chosen is the higher ground, that which is too high for rice to grow well, and the rent paid for such ground is at least three times that for the rice land. The trees are planted in regular rows and the turf is ploughed up. Thus attended to and left for seven years, the trees ripen and are rich in juice. After the rainy season, when there will be no more rain, the Gachi, or the tree-climber, cuts off the lateral leaves of the trees for one half of the circumference. The bare surface is left exposed for a few days. The tapping then commences. A triangular surface is cut into the trees, and a hollow bamboo channel is inserted into the trees which carries the juice out into a pot, hanging below it. The cut is made in the evening and the juice runs into the pot throughout the night and is collected next morning. The juice from the first cut is the best, and called *jee ran ras.* The juice from the cut in the second evening is called *Do-Kut,* not so good as the *Jeeran,* while that from the third evening's cut is called *Jharan,* which is sold simply as "droppings." The tree is allowed rest for three days and a new cut is made over the previous one on the sixth day. Thus the cuts continue throughout the winter season, beginning from October, when *Gur* fetches very high prices, and ending in February. Next year the cut is made on the opposite side of the tree. As each season's cutting is above the previous season's, and on the opposite side, the stem of the



TAPPING THE PALM JUICE.

tree has, if looked at from the side, a curious zigzag appearance. A good tree yields regularly on an average five seers of juice per night. The Gachi has no other tools with him except a sharp sickle, or Hasua, and a rope which he manipulates with his feet as he deftly ascends straight out to the top of the tree.

The juice is used as a drink fresh or after fermentation. It is then called *Taddy*. For making *Gur* the juice is boiled in large pots placed on a perforated dome below which a strong fire is made to burn. The juice becomes a dark-brown semi-solid mass after boiling, and it is then poured out into the earthen vessels called *Kalsis*. Sometimes solid *Khejoor-Gur* cakes, called Patali, are made by boiling the juice for longer time, which command a greater sale. Generally it takes from seven to ten seers of juice to produce one seer of *Gur*. The tapping season lasts four and a half months, or sixty-seven nights. Thus at five seers a night 335 seers of juice are obtained, or about forty seers, or one maund of *Gur* per tree, worth Rs.2 to Rs.2–4.

The cultivators sell the *Gur* in the market or to the sugar refiners. The refiner pours out the *Gur* into baskets, which are placed over open pans. The molasses passing through the baskets drop into the pans beneath and leave the sugar above them. *Shayala*, *Pathshyala*, and *Jhanji*, or mosses, are also placed on the top of the sugar. These keep the sugar moist and have bleaching properties as well. Thus the molasses are separated and the sugar becomes comparatively white. This is the *dhalo* sugar which is used chiefly by the people, and

especially in the manufacture of sweets. The *pucca*, or fine sugar, however, is much more refined. The process of its manufacture is different. The *Gur* is poured into flat wooden boards. A great deal of the molasses thus flows off. The rest is put into sacks and squeezed. The sugar is then boiled with water and the scum is separated from it. When it is cool the Shayala leaves are thrown over it. Thus good white sugar is obtained.

The waste molasses collected are called Chittya-Gur. This is boiled down into a black sticky treacle, which is utilized for mixing with the tobacco for the hookah.

# CHAPTER VIII

## THE OIL-PRESSING INDUSTRY

THE oilman is a very important member of the village community, oil being used by all Hindus for domestic as well as for religious purposes. The oils that have been largely used as illuminants are castor-oil and cocoanut-oil. But the introduction of kerosene, the best qualities of which are cheaper than ordinary cocoanut or castor-oil, as well as the invention of cheap German lamps, have reduced their demand within a remarkably short time. Kerosene has, in fact, reached even the peasantry in remotest villages. The cocoanut-oil, however, continues to be largely used in the country in cooking and for toilet purposes. It is also largely used in the manufacture of the *dhobies'* soaps. But the most popular oil in the country is the *til*, the name has the generic significance.

A very large quantity of seeds is annually sent to foreign countries. The share of oil-seeds in the total value of raw produce exported (excluding such as falls under the head food and drink) was in 1908 and 1909 successively 17·4 per cent. and 22·4 per cent. In 1910–11 it rose to 26·7 per cent. In value the increase is no less than 34·2 per cent. The average of seeds export for three years ending 1911–12 was 24½ million cwts. In 1913–14 the

quantity was over 31½ million cwts. Linseed is the most important to commerce, only about 6 per cent. of the annual average out-turn being retained in the country. Bengal and the Central Provinces have usually the largest extent of land under this crop. Til and mustard and rape are very much more largely consumed locally than linseed. The fatty oil obtained from the mustard and rape seeds is popularly known as the *karwa-tel*. It is the chief oil used in cooking by the people. Rape is largely used to anoint the body. Mustard is met with all over India, but grown most extensively in Bengal and Assam. In Upper India the rape crop becomes more important than the mustard. In the internal trade in oil-seeds, the most important receiving province is Bengal, most of the crops being drawn from the United Provinces and Calcutta. In the internal traffic in oils, the most important is mustard and rape, followed by "others," then by cocoanut and by castor. Of the traffic in mustard and rape the significant feature may be said to be the large exports to Eastern Bengal and Assam, and to Bengal proper from Calcutta. This is the direct manifestation of the oil mills within the city which imports large quantities of mustard and rape seed, chiefly from the United Provinces, to be used up in the manufacture of oil. Last year nearly 130,000 tons of mustard came by rail to Calcutta. In 1904, there were 112 mills, with the total number of persons employed 4985 (in 1903), 5200 (1904), in the whole country. The suburbs of Calcutta literally teem with private castor-oil mills. As manifesting their importance, it may be explained that while Calcutta exports a large amount of castor-oil,

practically no castor seed leaves Bengal for foreign countries.

But far more important, so far as internal consumption is concerned, is the manufacture of oil in almost every Indian village according to the old native method. The *ghani*, or the indigenous oil-mill, consists of a hollow wooden block (generally made of *tamarind* and *sisoo*) buried very deeply in the ground. The cavity in the mill is shaped like an inverted cone, the apex reaching to about midway down the block. There it is about two inches wide, and thence it widens again; the triangular hole thus formed is the exit for the oil. The pestle moves in the hollow of the mill, at the end there is a ball which fits tightly into the narrow point of the cavity at the waist. It is in this portion that the oil-seeds are placed. A curved block of wood connects the pestle with the vertical post fastened to the horizontal board. The *kalu*, or oilman, sits on the board. At its end, nearest the main block of the machine, is fastened a thick lump of wood which acts as a kind of washer between the end of the board and the block, and which also rests against the latter, revolving in a horizontal groove cut in the latter's exterior surface. There is a bamboo strut running up from the inner portion of the horizontal board to meet the upright post so as to strengthen the joint. The bullocks are yoked to the horizontal board. They are blind-folded lest they refuse to move continually in the circle. There is a peg standing up in the cavity amidst the seeds alongside the pestle. To its top is attached a horizontal handle, the other end of which is fastened to the upright post by another peg

The whole, therefore, revolves with the pestle, the first peg moving amongst the seeds concentrically. At the same time the stirring is rendered more effective by the peg being perpendicular and the pestle on the slant.

The *Kalus* generally employ two or four bullocks in relays of one at a time. After a few rounds the *kalu* waters the oilcake before pressing it a second time in order to abstract the residuary oil. This occasions the presence of a certain amount of essential oil, which gives a pungent odour and bitter taste to the mustard oil that is sold in the bazaars. The *kalu* often adulterates the oil with poppy seed, sarson, and other oils. They suppose that the adulteration would make the mustard yield oil more easily, as well as give a pungent odour to it. The oil falls on the earthen pot, on the mouth of which is a clean linen which serves to filter it. Sometimes the *ghanī* has no hole for the removal of the oil, which has in this case to be soaked up with a bit of rag, leather, or thin iron plate, tied on to a stick. In fact, the invention of the hole at the bottom of the mill seems to be recent, and has originated the *kalu* sub-caste. There is a legend, popular among the *Telis*, which bears on this point. In the beginning of time, Bhagabati made two men out of turmeric paste, and ordered them to bring her oil. One came back very soon with a pot of oil; the other took much longer. When the goddess asked the reason of the delay, the latter explained that he had to soak up the oil with a bit of rag and squeeze it into a pot, while the former had stolen a march on him by using a mill with a hole at the bottom through which the oil trickled out. On hearing

this the goddess was much offended, and condemned the former to be degraded to a lower caste. He is the head of the *kalu* sub-caste, the status of which is far lower than the main body of the *Telis*. The Gachua Telis and other sub-castes will never think of using a mill with a hole, which, however, is invariably in use among the *kalus*. Sometimes, again, even the *ghani* is dispensed with, a sub-caste of a still higher status being thus constituted. In Eastern Bengal, Sir H. Risley quotes Dr. Wise, the pure *telis* extract oil from til, and their caste is forfeited if any other oil be manufactured. The *ghani* is never used, the oil being prepared in the following manner: The seeds are boiled and given to low-caste Muhammadan women to husk. After being sifted, the *teli* puts them into large vats, boiling water being poured in, and the seeds allowed to soak for twelve hours. In the morning the liquid is beaten with bamboo paddles (*ghotna*) and left to settle, when the oil floating on the surface is skimmed off and stored, no attempts to purify it being made. The refuse, *khal*, is given to cattle.

The yield of the *ghani* differs in different localities. I have found in one place that every time eight seers of seeds are placed in the cavity of the *ghani*, linseed would yield 2–2½ seers, mustard 2½–3, and til 3–3½ seers of oil each time. Thus the average yield for four times in the day would vary from 8 to 14 seers, the duration in each case being on an average about three hours, though linseed takes a little longer time.[1] The Kalus ordinarily

[1] From another kalu I learnt that 3 hotays (approximately 10 seers) of mustard and rye seeds would give 2½ seers of oil, while the same quantity of til seeds gives 3 seers.

"In an old oil-press in Jessore district, the yield of oil per maund

purchase the seeds from the market and sell the oil. Sometimes, however, they undertake to manufacture oil out of seeds supplied by another and get the wages. Their charges are ordinarily, 3 annas for til and mustard, and 4 annas for linseed, weighing 8 seers in each case; these will be reduced to halves when the oilcakes are given to the *kalus*.

The *kalus* have always lands of their own which they till in the slack season. Even in ordinary

of seed crushed has been estimated to be 12–15 seers, *i.e.* 30–38 per cent. The press takes a charge of 7½ seers, and 1½ hours is required to complete one crushing. Kazli seed gives oil from 12–13 seers and brown and yellow seed give 13½–15 seers per maund, the yellow giving the highest yield of all.

"Three kinds of seed are used for pressing in the factory, (1) white or yellow. This is imported from Behar, Cawnpore, and Delhi, there being very little grown locally. Cawnpore and Delhi is the best seed, the Punjab seed being considered the best of all. Behar seed is smaller than the seed from these two places. (2) Brown. The remarks on the white and yellow seed hold good for this also. (3) Kazli. This is a small-grained brown seed, and is grown in Purneah, Nadia, Jessore, Midnapore, and Behar. Mostly, the seed grown locally is used for crushing; but it is imported from Purneah if the price is favourable.

"Rye is not pressed for oil, as the grain is hard and it gives a low yield.

"Oil is sold at Rs.16-8-0 to Rs.17-0-0 per maund of 82 lbs., and is all disposed of locally. It is used for cooking and illuminating, and also for anointing the body. The cake fetches from Rs.1-12-0 to Rs.2-2-0 per maund of 82 lbs., and is all sold in the neighbourhood. It is used for feeding cows, and also for manuring. As a manure it is especially liked for the betel vine, which is grown largely throughout Jessore. A large amount of mustard cake is imported from Calcutta for cattle food, and a small proportion of this, perhaps 10 per cent., is used as a manure for the betel vine, and also for market garden crops occasionally. The price of mustard seed is regularly quoted in Capital. Early in 1911 yellow seed was quoted at Rs.5-8-0 to Rs.6-8-0 per maund, and the brown at Rs.5-0-0 to Rs.5-14-0. Now, however (November, 1911), prices have gone up considerably, and such variations in price are likely to make all the difference between profit and loss in the undertaking" (*Agricultural Journal of India*, 1912).

times, the adult *kalu* works as an agriculturist, while the boys and women stay at home to look after the *ghani*. The boy sits on the horizontal board and drives the bullock, while the woman assists him in testing the oil when the seeds have been pressed or in measuring the quantity of the new seeds to be placed in the *ghani*.

Some of the *telis*, becoming wealthy, have given up the manufacture of oil and become *amdawalahs*, or traders, buying goods wholesale and selling them by retail. They are known as *tilis*. The *tilis* are now often regarded as a caste wholly distinct from *teli*. Other *telis*, who have abandoned the oil trade and become cloth-dealers and shop-keepers, take rank among the Nava-Sakha, or nine castes (now in fact fourteen), from whose hands a Brahman may take water, while the *kalus*, or working oilmen, are included in a lower group along with the Sutradhar, the Sundi, and the Kapali. In Behar the entire caste seems to stand on this lower level, and no Brahman will take water from their hands.

In this connection, the indigenous processes of the manufacture of attars, cosmetics, and essential oils might be indicated. India is renowned in the world for its perfumed blossoms, the essences of which have been extracted by indigenous methods for ages past. The manufacture of perfumes is chiefly in the hands of the Muhammadans, these being in universal use among Muhammadan women from the time of the Moghuls. In Bengal, in Murshidabad, Dacca, and a few other Muhammadan centres several Muhammadan families still continue to ply their hereditary crafts. The process by which they extract the essence is that of enfleurage.

Layers of sesamum seed wetted in water, alternating with layers of bela, henna, chameli, or other scented flowers are covered with a cloth and left for twelve to eighteen hours. The flowers are renewed periodically. After the seeds have been fully impregnated with scent, the oil is pressed in ordinary *ghanis* drawn by bullocks. The best essential oil manufactured by this process in Lalbagh (Murshidabad)[1] is the *bela*. It is manufactured only by two families, and sells in the town at Rs.4 per seer. Rose-water and *attar* are also manufactured by these people. This is done by the process of distillation (khincha). The flowers are plucked early in the morning and thrown into the retort on the fire. The retort is a copper or iron boiler joined by a bamboo tube, with a long-necked vessel called the *bhubka*. The perfume comes off in steam with the vapour of water and passes into the receiver. The receiver is placed in a vessel of cold water,

[1] In Lalbagh, Murshidabad, the industry is in the hands of two brothers who ply the craft secretly. The method of manufacture is never shown to anyone, not even to their agents. The apprentices are recruited from the members of the same family. The rose flowers are imported by them from Secunderpore, but they get the *Keora*, the *bela*, the *chameli*, and the *kamini* flowers from the local gardens. They can get one seer of the bela or the kamini for Rs.4, and one keora flower for one pice. The following is a price-list of the oils and attars :—(1) The kamini oil, 6 annas per bottle (of 2 ounces), the oil being distilled twelve times. (2) The bela oil, twelve times distillation, Rs.4 ; twenty-four times distillation, Rs.10. (3) The chameli oil, twelve times distillation, Rs.5 ; twenty-four times distillation, Rs.11. Ordinarily, however, a bottle of bela costs Re.1 - 8 to Rs.2 - 8, and that of Chameli Re.1 - 4 to Rs.2. (4) The keora and the bela attars sell from Rs.2 to Rs.50 per bhari. Scented tobacco is also prepared for use with betel, especially among the Muhammadan ladies. The artisans have to give a large share of their profits to the agents or middlemen who sell the oils in the town. They get 4 annas for every bottle of oil they can sell.

which is changed as it gets heated. The quality of the rose-water depends upon the number of distillations. It is generally distilled three or four times, the water from the first distillation being used to pour over the roses for the second. The distilled rose-water is then taken from the receiver, placed in a small glass *carboy*, and exposed to the sun. Its mouth is covered with cotton, and it is then ready for sale. The lowest quality sells at 8 annas a bottle, while the better sorts sell at Rs.1 to Rs.2.

In the manufacture of attar a quantity of sandal-wood oil, the *zamin*, is put in the receiver in which rose-water is allowed to distil from the retort. The sandal-wood oil absorbs the volatile oil from the rose-water, the vessel is then let into the ground, which had been previously moistened with water and allowed to remain for the night. The cooling causes a little film of attar to form on the surface, and this is skimmed in the morning and placed in a small phial. The attar is sold at Rs.10 per tola down to Rs.2 for the inferior sorts.

The foreign trade has greatly affected the cultivation and manufacture of most of the minor oils, more especially those intended as illuminants and lubricants. Kerosene has greatly affected the domestic economy of the Indian peasant; it is not likely that the consumption, when once its luxury and convenience are experienced, will diminish in future. If an average be struck on two years, 1909 and 1910, we find a weekly consumption of about 330,000 units of two tins, or eight gallons, in the whole country. In August, 1910, a rate war broke out between the Standard and the Shell interests,

and involved Burma companies. The aggregate reduction of rates from August 15 to the end of March raged approximately from 9 to 19 per cent. It has been estimated that the consumption for the first seventeen weeks of 1911 increased on account of the low prices by 24,000 units. It cannot be asserted that saturation point has been reached; but on the whole it is surprising that the low rates prevalent since August, 1910, did not more greatly stimulate consumption, and the inference probably is that there is a limit to the supply available at low prices. In 1913–14 the value of kerosene imported was nearly Rs. 3 crores. Russian oil is in popular demand. The American oil is out of reach of Indian consumers by reason of its higher prices.

In India, however, the use of the oil as an article of diet is perhaps more important than as an illuminant. Again, another important characteristic use of oil is the anointment of the body. It is certain that as long as the habits of the people are not changed, the manufacture of oil and the demand for the services of the *kalu* will not materially diminish. Reference has already been made to the importance of the export trade of India in oil-seeds. India sends to the West a very large quantity of oil-seeds and imports a considerable amount of vegetable oils. This means a double loss, the loss not only of lucrative employment but the loss also of the oilcake, the utility of which as the richest manure for our agricultural soil cannot be overestimated. Dr. Voelcker has said, "to export the entire oil-seed is to export the soil's fertility." The only remedy would be a better and more effective

system of the manufacture of oil in the country itself, and dependence on the Indian markets for the disposal of the cake. Only a more efficient local manufacture can counteract the disadvantage that in the present state of agriculture in the country, the bye-product of the manufacture, viz. oilcake, is less in demand than in Europe. The surplus cake, instead of the seed, might be imported as a regular commercial article. A seed generally contains 33 per cent. of oil, the freight on the seed in the present oil-trade is greatly enhanced by the weight of the other matter contained in it. In the latter case, if seed is manufactured into oil, even the bye-product, which is valuable in itself, will bear its own weight. Indeed, the stereotyped method of the manufacture of oil must end[1] in the face of the present disadvantages of the trade. Already the number of oil-mills in the country is increasing, and the domestic system steadily giving way.[2]

It cannot be said that the domestic system has no hopes. A single English hand-press costing from £40 to £50 can crush a ton of seed in three days. In the United Provinces Exhibition, one of the most important exhibits in the agricultural court was the complete working oil-mill supplied by Messrs. Greenwood and Batley. The plant was

[1] It is believed, however, that the iron press discolours the oil, and that a disregard of cleanliness will affect the quality of the manufactured oil, the oil from the indigenous wooden ghani being far purer and more sparkling. This may be pure conservatism, however.

[2] "Oil pressers have diminished by 47 per cent. during the last decade, as it was found more profitable to export oil-seeds and import pressed oil from abroad, than to press it at home by crude and antiquated processes" (H.H. The Gaekwar's Inaugural Address, Industrial Conference, Calcutta (1906)).

shown at work throughout the Exhibition preparing oil and oil-cake from cotton, linseed, mustard, and other Indian seeds. The official handbook has this remark, "The retaining in India of the oil-seeds produced in the country, and more particularly the cake, is of the utmost agricultural importance, so that this exhibit of a plant which is within the capacity of a small capitalist, both as regards price and the amount of material handled, is of more than usual interest." A co-operative organization might help the *kalu* in preferring such machinery for the primitive *ghani*, and thus in tiding over his difficulties, which are on the increase.

# CHAPTER IX

## POTTERY

The village potter plays an important part in the village economy and is as a rule much respected by the villagers. Though he is poorly paid, the articles he turns out are necessary for every household. They are—

(1) *Surahis*, or water bottles, which are very porous and clean, and are largely used for the cool water that may be drawn from them after an hour or so.

(2) Kalasas, waterjars, pitchers.

(3) Handis, cooking-pots, Bhandas, cups, frying-pans.

(4) Glasses, khuris (small pots), dishes, etc.

(5) Cheelams for the hookah or tobacco bowls.

(6) Rings for wells.

The shapes of these, which are as yet uncontaminated by foreign demand, are not only graceful, but highly instructive. It accordingly seems possible that were a complete series of all the pots used in carrying water or in boiling rice, or in holding milk, etc., to be collected from every race of people and from all parts of India, much of great interest would be learned, not only from the standpoint of the arts and industries of the country, but as object lessons in historic and anthropological

science. The shapes vary with every few hundred miles, and are severely isolated according to the races of people and the traditions of the country. The primitive methods of ornamentation shown on them might also afford suggestions of great value in the study of Indian decorative art.[1]

The articles which the potters turn out are very perishable and priced low. Thus their earnings on the average are small, amounting to Rs.6 to Rs.10 a month. Again, the potters are out of work during the rains. They require sunshine to harden their wares before they are fired, and hence have to stop work in the rainy season, when they become day labourers or cultivators in their own fields. In the working season, however, they are very busy, the little boys of their family helping them in their work.

The clay that the potters use is generally carried from the river banks and pond or *bil* sides. This is heaped in the corners of their hovels and there allowed to soak with water. After a couple of days the clay is mixed well with a shovel and is tempered by the potter with his own legs for about half a day. Next he takes care to examine the trodden clay, and picks out the stones or hard lumps, if any. Lastly, a proportionate quantity of sand is added to the clay before finishing it into a stiff paste. But if pots of a black colour are required (as in Sewan and Khulna) they mix with the paste some handfuls of ashes.

The village potter's instruments are only a wheel and a few flat mallets of wood. The former consists of a horizontal fly-wheel, two or three feet

[1] Sir G. Watt, "Dictionary of Economic Products."

in diameter, made of light timber, and its rim is covered over with a paste of straw and mud. This heavy load round adds to the momentum of the wheel while in motion. Once set spinning the wheel revolves steadily for minutes. The wheel rests upon a pyramidal stone and rotates on a strong pin cut from the heart of a tamarind tree and fitting loosely into a socket in the pyramid. In the rim there is an indent which assists in the wheel being rotated with the help of a bamboo pole, *pitna*.[1] The clay to be moulded is heaped in the centre of the wheel. A round ball of hardened clay is held inside. The bamboo is then applied to the wheel, and with a dexterous motion of his hands the potter sets the wheel in violent motion. His left hand is thrust into the centre of the clay, while his right hand is slightly pressing on the outside to keep the whole together; but it is from the inside that most of the shaping is due. Meanwhile the wheel is made to turn more quickly. Then by keeping both hands opposite each other, *i.e.* one inside and one outside, together moving slowly up from the wheel, pressure by both hands is exerted and the shapeless mass of clay assumes the required forms with astonishing rapidity. Sometimes fancy lines are cut as the plastic material is revolving on the wheel. Then he smooths the surface of the pot or any other model which he is preparing with a convex piece of wood. Next he presses a delicate twig at the bottom of the finished model just to cut

[1] The extension in the Behar districts of the form of potter's wheel used in parts of Bengal has been suggested by Mr. Cumming. The Behar wheel, the ancient "rote," is solid; the improved Bengali wheel has a heavy periphery attached by spokes to the central hub. The latter is mechanically more efficient.

it off from the heap of clay, and finally with a skilful movement of the hand he removes it from the wheel for being dried in the sun.

After it has become hard it undergoes finishing and polishing (with a special preparation called the *Kabis*). This is comprised of yellow earth (a form of fuller's earth) known as piary matti, of powdered mango-bark and shaji matti or crude carbonate of soda. Tiles and bricks are also manufactured by the potter in a different and simpler way. He prepares the semi-solid clay and spreads it out along the level ground. Allowing it to dry for a few days he cuts it into the required sizes and shapes by sharp-edged pieces of wood, the bricks and tiles thus formed are dried a little more in the sunshine. The pots, which are open on both sides, require something more to be done before polishing. The open bottom is closed by the potter by spreading out the clay with the help of a small, flat, wooden mallet, the whole thing being then polished and painted.

The colours are always mixed with mucilage obtained from bel or tamarind seed. Red paints are prepared with the red lead; yellow with arsenic and indigo; and black with charred seeds or red seeds. Garjan oil is used to impart gloss. Sometimes powdered mica is sprinkled over toys while the paint is still wet.

The tiles and bricks as well as the pots are afterwards stacked together in the form of a rough square with alternate layers of twigs, dry leaves, cowdung and other easy combustibles. The whole is next covered all round and over with husk and set fire to from the bottom. If the articles are

blackened as in Sewan, there are usually placed within the pan or the kiln some damp straw, cow-dung, and oilcake which generate much smoke. The confinement during the firing imparts black colour. Otherwise grass reeds or bamboo stems are the ordinary combustibles. One night and day is allowed for burning, while another night and day is taken up in cooling. Thereafter the conical frustum-shaped tiles are cut in two. As for the pots they are kept as they are.* The range of vegetable substances used in the same way as the mango bark in the preparation of kaby is very remarkable, and in each case it is claimed that these vegetable ingredients give it its polishing property over the clay. Among these may be mentioned the bark of the *tensa* tree, the leaves of the bamboo, of the *bashak*, etc. To impart colour the vessels are coated with coloured earth, such as *geru*, chalk, or *tale* (abrak) before the firing. The heat fixes the colour without the formation of a glaze. After being fired, unglazed pottery is often smeared with lac, one layer of lac over the other in order to make it impervious to fluids.

In almost all villages we find the potters turning out not only the things of household and agricultural use, but also clay toys for the young folk. In the smaller toys, figures of men and women, horses, tigers, elephants, etc., the outlines are imprinted from the moulds kept for that purpose. But the Krishnagar (Ghurni) and Santipore modellers who turn out images of gods and goddesses of full size have attained a far higher standard. The stuff of straw which is used from year to year is covered with clay, and the protima is painted and varnished

with an exuberance and profusion of colour that are quite in keeping with the magnificence of the Hindu religious festivals. These artisans decorate the images with tinsel ornaments, vying with each other in the effect they can produce. A subsidiary trade carried on chiefly by the lower classes of the society has also arisen. These prepare a magnificent stock of tinsel ornaments for a whole year to adorn the *protimas* and supply the entire Hindu population of Bengal on the occasion of the great festival.

But the artisans can best display their talents on the occasion of the Doljatra, when they are required to turn out new images, not according to any fixed time-honoured models. The figures they shape to adorn the *dol-prangan*, illustrating the ever-popular incidents in the lives of Sree Krishna and Ramchandra, or other episodes in Hindu mythology, amply testify to the high degree of excellence they have attained in the higher forms of the ceramic arts, and afford a striking instance of the use of artistic skill for ethical and religious purposes. The series of Hindu religious festivals, fasts and feasts that celebrate the procession of the seasons has found an expression in the ceramic art. Every religious festival gives rise to the manufacture of appropriate images of gods and goddesses and characteristic symbols which are largely purchased by the people on such occasions. Here is an instance of a popular art, kept alive by the procession of the seasons and deriving its strength from religious feeling and inspiration.

Not only the images of gods and goddesses, but the models of men and women, animals and things are turned out in large numbers by the artisans.

The models of everyday life in miniature turned out by the Krishnagore artisans have in recent years acquired a great celebrity and command a great sale. Models of fruits, vegetables, fish, etc., made of clay and lac, are sold at Rs. 3 a dozen. The price of a miniature cow or human figure ranges from As. 12 to Rs. 3.

Hindu observance and custom stand in the way of the development of the potter's art. According to the Hindu custom, pottery is easily defiled and has to be broken whenever polluted, since it cannot be cleansed in the same way as brass. So, again, pottery has to be thrown away on certain prescribed occasions whether polluted or not. On the occasion of an eclipse or a death in the family, the clay vessels used for cooking purposes have to be discarded. Thus has come into existence an immense traffic with the Hindu in a cheap material (where artistic developments would be superfluous), but no demand whatever for higher class of pottery. Glazing is almost unnecessary unless the ware be meant to hold water, and since artistic ware has mainly been produced in the way of grain or pickle jars, painted or lacquered pottery is equally serviceable and infinitely cheaper than glazed ware. Unless the social and religious customs of the people are modified, the higher developments of the potter's craft will continue to suffer.

There are, however, a few disadvantages the craft now labours under which might be remedied with a little output of capital. First among the potter's hardships is the waste of a good deal of energy and time by his leaving naught but his legs to temper the clay. To save this waste of time and

energy, he might very profitably make use of what is known as the pug-mill. This simple mechanism consists of a vertical shaft revolving in a hollow cylinder in which the clay is put. This is about three feet wide and has a hole in the bottom for the tempered clay to pass out. To the vertical shaft a cross beam is attached by one of its ends, while the other end is being dragged round and round by the bulls just as in the case of the indigenous oil-mills.

Coming now to the examination of the wheel, the worst disadvantage about it is that there is every danger of the wheelman being injured. There have been cases of permanent deformation. These dangers happen when the potter either stands too close to the fast rotating wheel or when the beginner slips and tumbles over while revolving the wheel with a bamboo. Further, the time taken in making a certain number of articles is far in excess of the actual time required to the mere shaping of them, and this time must be saved by some easy contrivance. The extra amount of time is spent in resetting the wheel in motion not only when beginning to shape a new pot or tile but also between the shaping and the rough polishing in the wheel itself. Thus while he should take about two minutes to work a tile he generally takes an additional minute. Hence in a day of seven hours' work he takes four and two-thirds hours to the actual shaping, while the remaining time is lost in extraneous labour. So then if these two and one-third hours be utilized in fruitful work he will be able to turn out fifty per cent. more.

There is yet another source of waste of time,

for even the most experienced man is not able to rotate the wheel without tilting it out of its horizontal position, and the wheel takes some seconds before regaining its stability and steady movement. All these entail a waste not only of time but also of energy.

A writer has suggested the introduction of a new mechanism, the advantages of which are rapidity of production, safety of person and uniformity of work. The time which the potter spends in maintaining the motion of the wheel is in the present case utilized in the actual shaping of the articles. And he can during the time that is thus saved do half as much work again. In this case, however, we have to take into account the wages of the boy working at the handle. But this item of expenditure may be reduced by half if one and the same handle is made to work another machine of its kind placed in contiguity. The potter, if he has a son, might not have the necessity to hire a hand. Even if he has not, there will be, in spite of having to pay the boy, a distinct gain of about 30 per cent. more than before. The rapidity of production depends to a certain extent on the uniformity of rotation and work. In this mechanism the same rotation can be maintained from first to last. In the potter's wheel, as it is, there is a great range for diversities of velocity, because the wheel after being set to rotate gradually slackens in speed, and the potter has sometimes to reset it even before a single tile or pot is made. Another evil attendant on the crude wheel is here cured. And it is that there is no chance of the wheel being tilted out of its horizontal position. The dangers which at

present beset the potter's wheel have been already set forth; and these two causes of danger will here be absent fully. For the whole mechanism is planted on a pit two feet deep, and is also covered over with planking at the level of the ground.

The process of manufacture of bricks suffers under an additional disadvantage. In making bricks by hand it is very difficult to get the edges sharp and well defined, the only way to obtain this being to use none but well-made moulds, and to reject at once any mould found to be in the slightest degree cracked or damaged. That difficulty is to a large extent overcome by the use of machinery, though an even greater disadvantage at once arises, viz. that machine-made bricks have to be transported from the brick-field to the building site, thus materially adding to their cost. In India it is usual to manufacture hand-made bricks near the place where they are used, and it is highly likely that the clay employed is not always the best that would be desired or discovered, were a search made a little further afield. Finally, the Indian climate is a serious consideration. It is impossible to harden a large number of bricks at a time on account of the size of the kiln. The bricks absorb moisture and are badly cracked in the sunshine. On account of this reason, the manufacture of bricks by hand and firing by kilns is gradually decaying. In the immediate neighbourhood of Calcutta, which is the most important brick-making centre of India, bricks are for the most part fired by furnaces and not kilns. In this way, the Akra factory, which is the largest brick factory in India, can turn out twenty to thirty million bricks annually.

The industry has now begun to be carried on efficiently according to scientific methods, and on a large scale in different places. On this side of India, the Calcutta Pottery Works has been manufacturing tea-cups and saucers, ink-pots, dolls, etc., which have excellent finish, and command a large sale in the country. Indeed the scope for improvement of the cottage industry in this case has declined to a great extent. The people have begun to use enamelled iron wares for their household purposes. China wares are also coming into daily use. Earthen lamps are being superseded by tin lamps, and tin dishes and jugs are also replacing earthen wares. Still the cottage pottery is universally found in the rural tracts of the country supplying earthen wares to all classes of the people, the poor who cannot afford to use wares of iron, copper and bell metal, and the rich who are enjoined by religion to use earthen wares for certain purposes defined by the *Shastras*. Not to speak of the cheap earthen wares that are in constant use in the Indian household, cheap toys and small models as well as images for worship will always be required, and the art that meets this demand will not find its scope limited by the encroachment of large-scale pottery works.

# CHAPTER X

## CARPENTRY

The carpenter has an important place in the economy of the village. In all parts of the country the plough which is made entirely of wood with the exception of the *phal*, is manufactured by the indigenous carpenter. The villagers depend upon the carpenter for the woodwork of their houses, the railings, doors, and windows, for articles for personal use, such as bedsteads, lamp stands, chests and boxes, *kharams* or *barkashes*, or for vehicles like the *palki*, the cow-cart, or even the river boat.[1] The higher branch of the carpenter's art, viz. that of wood-carving, is more or less dying out. This industry, however, reached the apex of the beautiful in the past. Wood-carving now

[1] "The boat-makers and dugout-makers are more centralized carpenters, and colonies of these are to be found in one or two villages of most East Bengal districts. On some villages on the Karnafuli river in Chittagong a large number of *Sarangas*, *Kondas* and *Sampan* boats are made and exported largely to Noakhali, Tippera and other districts. Malda was at one time a great centre of boat-building. In the sub-division of Habiganj in Sylhet special kinds of flat-bottomed *Sarangas* are manufactured and great quantities of Reels and half-finished boats of jarul wood are made for sale at Pandauk Bazar in the Tippera district. Dacca is famous for its "house-boats," and the Dacca mistries are in requisition all over the province either to build, or to supervise the building, of such boats. A fairly comfortable Dacca boat can be constructed for Rs.1000" (G. N. Gupta, "Survey of the Industries of Eastern Bengal and Assam").

exists only nominally, there are no wood-carvers now whose work can bear any comparison at all with the splendid remains of the older art. There has been a sad deterioration of the public taste. The rich as well as the poor people of the past while building their dwellings appear to have held to the constant idea that some part of the ambient where they had to spend the greater part of their lives should possess something to delight the eyes, therefore stone and wood-carving was employed in the erection of frontage to a house whose proportions, adequate to the means and the æsthetics of its owners, would generally afford at least some carved pillars, doorways, architraves carved windows, etc.[1] But now there is no demand for them, none of the new buildings have any wood-carvings at all. The wood-carvers, therefore, have no chance to employ themselves except in making toys or small boxes which find a large market in the country. Thus the wood-carvers have become mere carpenters, and the industry which had such a magnificent past fails to inspire any enthusiasm in the hearts of its present votaries.

A better artisan employs himself in making doors and windows, chairs, wooden pans in which dough is kneaded, etc., or he turns out what are called Benares toys. These are painted in gaudy colours by the carpenter rubbing sticks of coloured sealing wax as the toy is made to revolve in the lathe. The friction melts the wax which adhere to the surface of the toys. The ordinary carpenter is chiefly occupied in making and mending carts, well

[1] Chevalier O. Ghilardi's "Monograph on Wood-carving in Bengal."

gears, farm implements, sometimes cotton gins and sugar mills. During the agricultural season, therefore, he is very busy, working from morning till evening or even late at night. The following kinds of wood are generally used by the ordinary carpenter: Sal for woodwork of houses, Sisoo for bedstead, Sagun for doors and windows and furniture and chests, Giringa for toys, Jack fruit for khats, chests and toktaposh, etc. He uses the following tools: (1) *hataru*, or the hammer; (2) *rukhani*, or the wood-cutting chisel; (3) the *barsi*, or the axe; (4) *randa*, or the plane; (5) the *ara*, or the saw;[1] (6) the *bamer*, or the drill; (7) the screw-driver. These tools are rough and bad and unsuited for fine workmanship and finish. "The saw is in such a bad order that the carpenter cuts tenons as a rule with a mallet and chisel, and his ignorance of gauges renders him unable to make even twenty articles exactly alike; also the carpenter rarely knows what size of nail or screw is required on a given job, whilst his screw is always too small. The carpenter has to be taught to measure accurately, to use sharp tools, and to cut to the mark.[2] The Indian lathe is also defective. It has been suggested that the Indian lathe with its double rope ends should be supplanted by a rope pulley which would work continuously when driven by a large wooden wheel.

The industry furnishes an excellent opening for middle-class capitalists. In the small factories

[1] The carpenter uses his toes as well as his hands to hold the wood, and he works the saw in a way the reverse of the Western craftsman. Its teeth, therefore, are cut in the opposite direction.

[2] Mr. Wallace in *Cassier's Magazine*; Mr. Cumming in Part. II. of "Special Report on Industries in Bengal."

machine plant driven by mechanical power such as a hand-saw, planing and morticing machines might be established. The introduction of such improved hand tools which are used in the European or Chinese firms in Calcutta, or of machine tools run by the steam or oil engines or by coolies, may lead to great improvement, and make the establishment a profitable concern, as some of the carpenters show great cleverness and ingenuity. There has been in recent times a steadily increasing demand for English furniture, and the carpenters who have hitherto supplied the few stools and cots for the Indian household have also to move with the times. Otherwise the fresh demand would be met by foreign firms established in Calcutta or elsewhere.

# CHAPTER XI

## HANDLOOM WEAVING

HANDLOOM weaving is the most important cottage industry of our country. Two-thirds of the skilled artisan population of the country are handloom weavers. Moreover, weaving is followed as a subsidiary occupation by a large proportion of our population.

In most parts of the country the handloom fills up the intervals of husbandry and provides the clothing of the agriculturist's family. Besides those who are primarily agriculturists, but who weave at certain times of the year, there are in all India about 28 lakhs of handloom weavers. The following statistics indicating the quantity of yarn consumed in the country, with the sources of supply, give a clear idea of the importance of handloom production :—

1. Yarn consumed in the production of mill-made cloth in India (million lbs.)—

| 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. | 1908-9. | 1909-10. |
|---|---|---|---|---|---|---|---|---|---|
| 98¾ | 119½ | 122¼ | 138 | 158¾ | 164 | 165¾ | 189 | 192⅓ | 228¾ |

2. Indian mill-made cloth for home consumption—

| 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. | 1908-9. |
|---|---|---|---|---|---|---|---|---|
| 66 | 81½ | 8496 | 115 | 118 | 158¼ | 184¾ | 187¾ | 217½ |

3. Indian handloom production—

| 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. | 1908-9. | 1909-10. |
|---|---|---|---|---|---|---|---|---|---|
| 162 | 206 | 226 | 203½ | 189½ | 252 | 268½ | 256⅕ | 257⅕ | 199⅕ |

4. Foreign-made cloth imported—

| 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. | 1908-9. | 1909-10. |
|---|---|---|---|---|---|---|---|---|---|
| 490½ | 535 | 519½ | 500½ | 570¼ | 614⅓ | 580 | 633½ | 499 | 550 |

The total out-turn of piece goods of our mills and handlooms stands each at present at about 228 million lbs., or together over 450 million lbs. Since the year 1905–6 the out-turn of Indian mill-made cloth has increased 36 per cent., while, comparing the figures of the last five years, we find that there has been an increase of handloom production by no less than 50 million lbs., or over 25 per cent. The imports of foreign-made piece-goods come up to 556 million lbs. Thus, out of the total consumption of 1000 million lbs., the Indian mills and handlooms each produce for home consumption 225 millions, and together 450 million lbs. If we take the average of 1911–14 the total weight of yarns consumed in the Indian mills comes to 246 million lbs., and that consumed in the production of cloth by hand-weaving is about 262 million lbs.

The first step in the process of handloom-weaving is the preparation of the cotton. India imports every year a large quantity of American and Egyptian cottons,[1] chiefly for the manufacture

[1] In the opinion of Mr. F. Fletcher, the experiments so far conducted have sufficiently demonstrated that on perennially irrigated areas in Sind, the Egyptian cottons can be grown normally, and would presumably give even a large yield. If the whole of Sind were put under perennial irrigation through a dam constructed at Sukker, the potentialities of the province for the cotton growing could not be surpassed even by the United States.

"Recently, the extraordinarily high price of raw cotton, resulting from shortage in the American and Egyptian crops, greatly restricted the use in India of such long staple foreign cottons as are wanted for the production of high count yarns. These are used in the manufacture of fine cloths and muslins in India ; and the industry

of the finer fabrics. These are sold in Indian markets and are purchased by the weavers, either directly or through middlemen. Frequently, however, cotton is grown in plots of land adjoining the weavers' cottage. Women are employed in picking the pods of cotton from the fields. The pods are then exposed to the sun and the husks removed. The cotton is cleaned by separating the seed from the fibre. This is done at first with the hands and then with the small hand-machine called the *charki*. It consists of two rollers of wood or iron made to revolve towards each other by hand labour, communicated by a crank or wheel. The seed-cotton is presented at one side against the rollers, the lint passes through, and the seed falls down in front.

On an average, the charki produces from three to four seers of clean cotton per day for each man or woman engaged in the work. Though no modern machine injures the lint and seed less than the native charki, its great defect is its slowness, and therefore inaptitude for dealing with large quantities. This has led to the establishment all over the country of large public ginning and pressing mills, each situate in a convenient position to drain the produce of a tract of country within which it often has a monopoly. The cultivators everywhere now hardly gin their own cotton, but carry the produce of their fields to the steam-ginning mills. Widely different lints are consequently

is largely conducted by hand-weavers, who are not financially strong enough to take the risk of dear material; so the importation of foreign cottons in 1910–11 declined by more than half, and the quantity was equal to 8 per cent. of the total mill consumption of cotton in 1910" (Frederick Noel Paton, "Review of the Trade of India, 1910–11").

mixed and ginned together, and, moreover, the cultivators are given, or purchase, mixed seeds. This has, in consequence, led to an equalization and degeneration of the Indian staple.

The next process is that of carding. This is done by the *dhunia* by means of the *dhunetti*. It is a bow of hard wood, which is held with the left hand so that the string may just touch the cotton. The *dhunia* twangs the string with the mallet, the string vibrates and separates the cotton fibres and all the dust also falls out. Some of the cotton thus carded is used in quilts and pillows, but the greater portion is spun into thread.

The *charka*, or the spinning machine, consists of the wheel and the spindle, which are so arranged that a swift revolving action is given to the axle of the spindle by means of a driving band which passes round the driving-wheel. Cotton in the form of a wick is presented to the point of the spindle and then spun into a thread, which is allowed to roll round the spindle. When the projecting point of the spindle is full, the thread is moved and rolled round the *natai*. The next process is that of cleaning and stiffening the thread in khahi, chera, or rice-water. The *attob* rice is boiled, and to this is added a small quantity of lime and tamarind. It is again placed in the *charka* and rolled round the *natai*. Then it is dried by being stretched across a number of stakes in the sun. In the rainy season the threads are dried over the fire, and the weavers generally do not use starch water. The spinning industry has suffered a great deal in recent years. It has been all but annihilated in the competition with machine-spinning. Throughout the country

cloths are in most cases manufactured, not from homespun, but machine-made thread, European and Indian, which is available in most markets, the old method of spinning being maintained only in those places where communications are difficult. Thus, in old Bengal, it is only in parts of Orissa and Chotanagpur and in Chittagong and Tippera, that the country thread is used and cotton-spinning carried on as a domestic industry. It is almost extinct everywhere else. The most skilful hand-spinners in India are those of Dacca; they are producing to-day yarns of a fineness that no machinery in the world could spin from the inferior staple which they use. It would thus appear that the European spinner, with all his beautiful machinery, may still have something to learn from the hand-spinner. It is unfortunate that such a high-class hereditary skill is fast becoming extinct. "Three years ago," says Mr. N. N. Banerji, "I was informed by one of the manufacturers of Dacca muslins that the generation of women who spun the yarn of which the finest fabrics were made has all passed away, except two very aged beings who, with their defective eyesight, earned but a precarious livelihood at Manickgunge."

The thread which is thus spun and cleaned in the weaver's cottage, or the machine-made yarn purchased by the weaver from the market, is then ready for the last process. The threads are arranged in groups by an instrument called the *ach khaya kata*, and are rolled round the *naros*. These are then placed across the longitudinal threads which are to form the cloth with two sticks, one above and one below the threads. The whole is then

stretched, one end is rolled round the *naros*, and the cloth, as soon as the weaving is finished, is rolled round another piece of wood called the *kapa*. Next are the bag threads and the sticks, which are balanced on a framework called the nachni over the cloth to be woven. An iron instrument called *maku*, to which some thread is attached, is passed from one side to another through the threads, and supplies the cross-threads and completes the weaving.

The cotton fabrics woven in the handlooms may be classified into (*a*) very fine cloth, (*b*) cloth of thick texture. Malmal is the generic name for the very fine webs. The best muslin, as the thin cotton cloth is often called, is that made in Dacca. The embroidered muslins, such as scarfs, handkerchiefs, and pagris, or turbans, are known as *kasida*. The jamdani, which is the name of the figured muslins, shuti sari, and urani, *i.e.* cloth and cover, are the most famous. The peculiarity of the jamdani is that it is hand-embroidered in the loom; its price ranges from Rs.50 to Rs.125. In Bengal, the other places well known for the manufacture of fine cloths are Farashdanga and Santipur, the dhutis and saris of which are greatly admired throughout the Province. Cloths of thin texture are also made in Chandrakona and Kalna, Barnagore, Pabna, and a few other places. The *mausari kapar*, or mosquito-curtain cloth, is also a thin fabric woven in different parts of the Province. This is generally made in check, and the best is made in some of the villages of Burdwan.

Cloth of thick texture is made as a village industry in almost all districts of the Province, and is known as *mota kapar*. The gamcha, which

is the bathing napkin of thick texture, is in universal use. The Muhammadans call it lungi. In Comilla, coloured coarse cloth is woven. There are other special kinds of thick cloth, *e.g.* the *Fota* cloth used by women, made in Rangpur, Purnea, and Jalpaiguri, the brown *khaki* cloth woven in Madhubani Sub-Division, Darbhanga; the cloth *motia*, used generally by the poor in Behar. In Behar some of these coarse cloths are converted into towels, table-cloths, and bed-sheets. Ashans, durries, and sataranjis, which are all cotton floor-cloths, differing only in size, are also chiefly made in Behar; in the jails, not only of Behar, but also of Bengal, good sataranjis are now manufactured. Other varieties of thick cotton floor-cloths are galichas and jajims. The process of weaving carpets and galichas differs from that of weaving ordinary cloth. Newar tape and sutis are also made in Behar, the former is used for bedsteads, khats, and the latter for tents, shamianas, etc. The machine for rope-twisting consists of a bent wooden handle and a perforated board. The strands are fastened at one end to the handle and the other ends are twisted by the hand.

The cotton goods are sold as they come from the loom. The great bulk of the cloth woven by the people does not require the services of the tailor. The dhutis and chaddars and saris, gamchas and pagris are not required to be cut or sewn. The middle or lower classes, however, use the tailor-made garments, jamas, churidars, pyjamas, and tupis, which indicate a preponderance of the Muhammadan fashion. Nowadays, however, the European style of dress is being steadily adopted,

the loose garments are gradually replaced by the tight-fitting coats, bodices, jackets, and drawers, leading to an increasing demand for the services and skill of the tailoring class.

The methods of organization of the weaving industry are characteristic of the indigenous type. The industry is mainly in the hands of particular castes, the Tantis and Tuntvays and Jugis among the Hindus, and Jolahs among the Muhammadans. Though other castes have been known to follow the occupation, their number does not bear appreciable comparison with the weaving castes proper. In the weaver's household, not only the male but also the female members of the family help the weaver a great deal. We have already seen that women not only pick the pods of cotton from the fields, but also clean the cotton, first with the hands and then with the charki. Carding is not done by women, but spinning is usually their work. In Indian society, where the family furnishes the main career of the women, she is generally of necessity in a position of dependence either on father or husband. But she could earn and have her own pin-money by her spinning work. The late Sister Nivedita wrote,[1] "A hundred years ago the main occupation of all women, and especially of those of gentle birth, in our country was spinning. I have known many a man of high education whose childhood was passed in dependence on the secret earning of, say, a grandmother." The old woman loved the charka even as her husband, son, and grandson who could give her riches—"চরকার দৌলতে মোর দরজায়

[1] "The Position of Women in the East," a paper read before the Universal Races Congress, 1911.

बँधा हाथी." Such a possibility no longer exists, and perhaps one of the saddest consequences has been the amount of unfruitful leisure that has taken place. Instead of the old spinning and its kindred cuts, the woman has become still more dependent on her husband than she was. In India, beside the class of women teachers, the old household industries, in a lower social class, are giving place to the factory organization, and in many places woman is becoming a wage-earner. This change is, of course, accompanied by great economic stability and by the pinch of poverty in all directions. It is one of the many phases of the substitution of civilization which is now proceeding.

The arrangement of the warp, which is the most tedious portion of the weaver's work, cannot be done except with the help of his wife and boys. In the work of actual weaving, however, men do the greatest portion, but women have also their part here. They generally assist the weavers in wrapping the thread round the bamboo spools placed inside the shuttle. The process of weaving *sataranjis* requires two men, and when these are large, more than two have to work. In this case the weaver is helped by his brothers, nephews, or other male members of his family. Thus all the members of the weaver's family, young and old, work together for the common object. The head of the family distributes their work and all benefit if he gets higher profits. Indeed, this is one of the reasons why the domestic industry still persists. The factory can give employment only to the able-bodied, and if all the male members get employment, the women and children have no work to do.

In spite of the advantages that the co-operation of all the members of the family in the work brings about, the weaver labours under the difficulty of want of capital. A large family sometimes becomes a curse rather than a blessing to him. The weaver usually borrows money from the middlemen who deal in cloths. He does not pay interest, but he sells the cloth at a reduced price to his mahajan. He often spends more than he can produce or pay. The mahajan, who wants to get in return cloths whose value is equivalent to the money he has advanced, has then to give another order. This system of advance goes on from year to year, the weaver is perpetually in debt to the mahajan. And when a marriage, or a sradha, comes about, his ruin is certain. The cloth-dealers, in order to be sure of the supply of the stipulated out-turn, sometimes supply the weaver, not with money, but with the necessary warp and weft. The orders are executed piece by piece, and the weaver is given only the amount of wages agreed to previously. There are, indeed, at present only a few weavers who lay out their own capital and do the work. The cloths manufactured are often given to the *dalals*, or middlemen, who effectuate sales. In certain cases, however, the weavers hawk about their own goods from house to house and get orders to carry out.

For the last few decades there has been a rapid decline of the handloom weaving industry throughout the country on account of the competition with machine manufacture. The machine-made goods imported from abroad are much cheaper and finer in quality. The lowest price of an indigenous *dhuti*, or *sari*, is not less than Rs. 2 to Rs. 3, and that of

an *urani* not less than Rs.1-8 to Rs.2, whilst a machine-made *dhuti*, or *sari*, costs 10 annas to 12 annas, and an *urani* 6 annas to 8 annas. Thus, though the mass of the population still wear the very coarse cloths and napkins prepared in the handlooms, the indigenous industry greatly suffered in the competition. Large numbers of weavers abandoned their looms and took up other pursuits. Recently, however, there have been signs of improvement in this important industry. In Bengal, especially, the industry recovered by 1906–7. This was due to an increased local demand for indigenous goods. In many districts the out-turn of the handloom has increased a great deal; many weavers who had given up their caste occupation have returned to it. Taking individual districts we find that the development has been the greatest in those districts which have been able to supply an expanding demand for any special class of goods. For instance, the industry seems to have progressed most in Noakhali, Comilla, Pabna, and Faridpur. All those districts, besides producing the usual saries and dhutis, turned out a very large quantity of check and chintzes, both thick and thin and suitable for the making of coats, shirts, and panjabis, and of the weaving mostly in vogue now.[1]

But will this development of the handloom industry continue? It has been sometimes said that handloom weaving is a small moribund industry, inevitably doomed to be crushed out entirely by the power-loom. Lord Curzon at the Delhi-Durbar said that the power-loom will drive out the handloom, just as surely as the steam car is advancing

[1] J. G. Cumming, "Industrial Survey of Bengal."

and the hand-pulled pankha is being replaced by the electric fan. Sir George Watt also said that its extension was inevitable. The hope of the handloom weaver, however, lies, he says, in the restriction of his operations to lines that are too small to tempt the competition of the power-loom weaver. He affirms that "there is nothing either too fine in texture or too complicated in pattern for the power-loom manufacturer to produce. His advent in the field is alone restricted by the possibilities of profit. The finest Dacca muslins and the most intricate Kashmere shawls can be, and have been, manufactured by machinery cheaper than by hand labour. But there are markets eminently suited to the hand weaver, such as the production of special saries and lungis of a particular shape and size that the power-loom producer does not successfully contest. There is this also in favour of the handloom weaver—he can purchase the very best English-spun yarn and produce a quality of fabrics admittedly superior to the very best power-loom textiles ordinarily turned out by the Indian mills. But let it be repeated, his safety lies in the goods he manufactures being of fancy or special nature meeting local markets known to him, rather than the regular commercial articles, and intended for large markets." The official view, however, has now been greatly modified. The experiments of Mr. Havell and Mr. Chatterton have convinced the Government that the handloom can still compete with the power-loom, and handloom factories have been established by different local governments in the great weaving centres of the country. But the notion of a competition between the handloom and

the power-loom is altogether wrong. The handloom does not compete with the mill, it supplements it in the following way: (1) It produces special kinds of goods which cannot be woven in the mills. (2) It utilizes yarn below and above certain counts which cannot at present be used on the power-loom. (3) It will consume the surplus stock of Indian spinning mills, which need not then be sent out of the country. (4) Being mainly a village industry, it supplies the local demand and at the same time gives employment to small capitalists, weavers, and other village workmen; and (5) lastly, it will supply the long-felt want of an honest field for work and livelihood for educated Indians.[1]

Mr. Patel, Director of Agriculture and Industries, Baroda, has prepared a table giving a probable estimate in millions of yards of the different classes of cloth consumed in the country with their sources of production—

| Class. | Warp counts. | Weft counts. | Indian hand-loom supply. | Indian mill supply. | Foreign imports. | Total consumption. | Percentage. |
|---|---|---|---|---|---|---|---|
| | s. s. | s. s. | | | | | |
| Coarse | 6 to 16 | 6 to 20 | 900 | 60 | 300 | 1,260 | 26 |
| Coarse medium | 20 to 26 | 20 to 40 | 150 | 500 | 1,100 | 1,750 | 37 |
| Medium | 26 to 40 | 30 to 50 | 450 | 40 | 750 | 1,240 | 26 |
| Fine | Over 40 | Over 40 | 150 | 0 | 350 | 500 | 11 |
| | | Total | 1,650 | 600 | 2,500 | 4,750 | 100 |

The bulk of the very coarse cloths is woven on Indian handlooms from Indian mill-yarn. This yarn is made from very inferior cotton. Some of

[1] *Vide* Professor Lees Smith's lecture on the importance of developing the handloom industry in India, January, 1909, Bombay.

the mills in Bombay tried to produce this class of cloth, but the yarn could not stand the speed of the power-looms. They had to give it up as a bad business. This cloth is very thick, warm, and durable, and is made everywhere in the country for local sale. This cloth may therefore be considered as coming within the absolute sphere of the handloom. Foreign cloth of this class is being imported, but with increased local production the foreign article may be supplanted. The main bulk of the coarse medium class is made up of imported shirtings and Indian mill-made shirtings, chadars, T. cloths. This class forms over one-third of the total cloth consumption of the country, and the supply is almost equally divided between the Indian and foreign power-looms. Coarse medium yarn is very strong and can stand any amount of rough usage in the power-loom, and the handloom has therefore no ultimate chance against it. The medium class consists mainly of dhutis, saris, etc., consumed by the large body of the Indian middle class. Indian cotton is unsuited to produce warp yarn of this class, while the weft yarn produced by the Indian mills is used up in weaving cloth of the coarse medium class by power-looms. Competition in this class is between the foreign looms and Indian handlooms, both using foreign yarn. A cheap machine, cheap home labour, and the production of stronger cloth on account of proper dressing of yarn are in favour of the handloom weavers, while the power-looms cannot work so fast on this yarn as on the coarse medium. Mr. Patel thinks that an extra production coupled with the sentiment of protection can help the handloom workers in this class a great

deal. The production of the fine class is restricted to handloom and foreign power-looms, and the speed at which the power-looms can work on fine yarn being still further restricted, the handloom ought to be supreme in this class of work. The difficulty, however, comes in the want of bleaching and finishing. The fine cloths can be produced on handlooms specially in the humid districts of Madras and Bengal, but the sun-bleaching process adopted in the country neither gives a fine feel to the cloth nor preserves its strength.

Central bleaching and finishing factories can alone help the weavers to get the upper hand in this competition. With proper arrangement for bleaching, and the cultivation of Egyptian cotton in the country, the handloom can get a still greater advantage over the foreign power-loom.

But in spite of the advantages of the handloom weaver so far as certain classes of the cotton piece goods are concerned, the speed of his work should be increased in order that he may successfully compete and meet the growing demand. The handlooms and the necessary appliances and methods would have to be improved. Otherwise the industry would not develop. Mr. Havell, since 1901, has persistently advocated the substitution of the fly-shuttle loom for the native loom, claiming that if that was done, the output of the weavers would be doubled. But the fly-shuttle loom has not been popular among the weavers. Mr. Alfred Chatterton, who was for some years carrying on experiments in the handloom weaving factory at Salem, under the orders of the Government of Madras, found that the weavers were ignorant and conservative, and in

their eyes the fly-shuttle loom presented too small an advantage over the Indian loom to make them change their ways of working. Mr. Churchill, of the American Mission Industrial School, Ahmednagar, has also come to the same conclusion, but he thinks that for the fine cloths there is no better than the English fly-shuttle loom on the market. "If the hand-weaving industry is to prosper, however, there must be a better one, and if such a better one can be found, and the Indian warping methods much improved, as most of those engaged in hand-weaving believe it entirely possible and probable, we expect the continuance and prosperity of the hand-weaving industry for many generations to come."[1] Mr. Churchill has enumerated some of the directions in which the further development of the handloom may profitably take place.

(1) Any improved handloom must be capable of being run all day, day after day, with ease by an ordinary man else it will fail.

(2) To put it beyond the probability of being soon set aside in competition with the power-loom, it should have a speed approximating that of the latter. Mechanically speaking, this is entirely probable, as the power required to put a thread through a shed is insignificant. It is the cumbersome methods and machinery now in use to accomplish this that demand the power, not the act, of weaving. The speed should be restricted to the maximum working speed, the yarn at the weaver's command should be able to stand the climate in which he works. Mr. Chatterton thinks that so far

[1] "Handloom Weaving in India," by Raoji B. Patel, M.R.A.C. (*The Indian Review*, January, 1907).

as the fly-shuttle loom is concerned, the improvement that should be sought for is not so much increasing the rate of picking, which is already quite fast enough, but in improving the details of the shedding and the working of the sley, so that the operation of weaving subjects the comparatively delicate threads to the minimum amount of strain.

(3) It must be adaptable to all ordinary widths of Indian hand-made cloth. This does not mean that the same loom must weave all classes, but it ought to be capable of being designed to suit the various kinds of cloth.

Not only have the handlooms to be improved, but the position of the weaver has also to be raised in order to ensure the development of the industry. We have already observed that the ordinary weaver gets his yarn and other materials from the village mahajan on credit, and sells the finished products on terms fixed by the mahajan, who generally takes the most unfair advantage of the necessities of the weaver. Sometimes the middlemen are the cloth merchants, who generally absorb most of the profits, leaving very little to the weavers. The progress of the weaving industry is impossible as long as the weavers are in their present state of slavery. When the weaver is free he will not be found so dull as he is at present. To relieve the indebtedness of the poor artisans the Co-operative Credit Society has been found to be the most useful organization. Throughout the country the number of credit societies for the industrial classes shows a steady and gratifying increase. Of these the weavers' societies have been very successful. Their functions are twofold. First, they purchase yarn,

etc., at wholesale rates, and retail it on credit to the weavers at a small profit. Secondly, they sell the finished products effectively. They also advance cash to help the weavers over the slack season, taking the finished clothes as pledges to be redeemed when there is a brisk demand for them. In this way the weavers get their raw materials at reasonable rates, and obtain the best market price for their labour. The arts of production are cheapened while the middlemen cannot intercept the profits of sale. The weavers have been found to be so punctual in the payment of advances that the law is seldom invoked, and while their condition has greatly improved, the institutions have been a fair financial success.[1] The multiplication of such co-operative institutions is a necessity. It is the system of co-operation alone which can bring most easily a comparatively large amount of capital within reach of the poor weavers with which they can buy the special machinery or adopt the improved methods and appliances. The weavers as a rule are organized into caste or trade guilds. Co-operation would tighten the bond of the caste system, help the weavers to tide over the slack season, and by affording an easy access to capital and improved methods and appliances might enlarge their scale of operation. Again, the maintenance of joint warehouses for storing finished products and their joint sale will stimulate the work of the weavers by assuring them the fruits of their labour which they are unable to reap under the present system. It is indeed certain that the weaver in his cottage, left

[1] *Vide* A. C. Chatterji's report on the industries in the United Provinces.

solely to the mercy of the mahajan, must succumb in the competition with the power-loom.

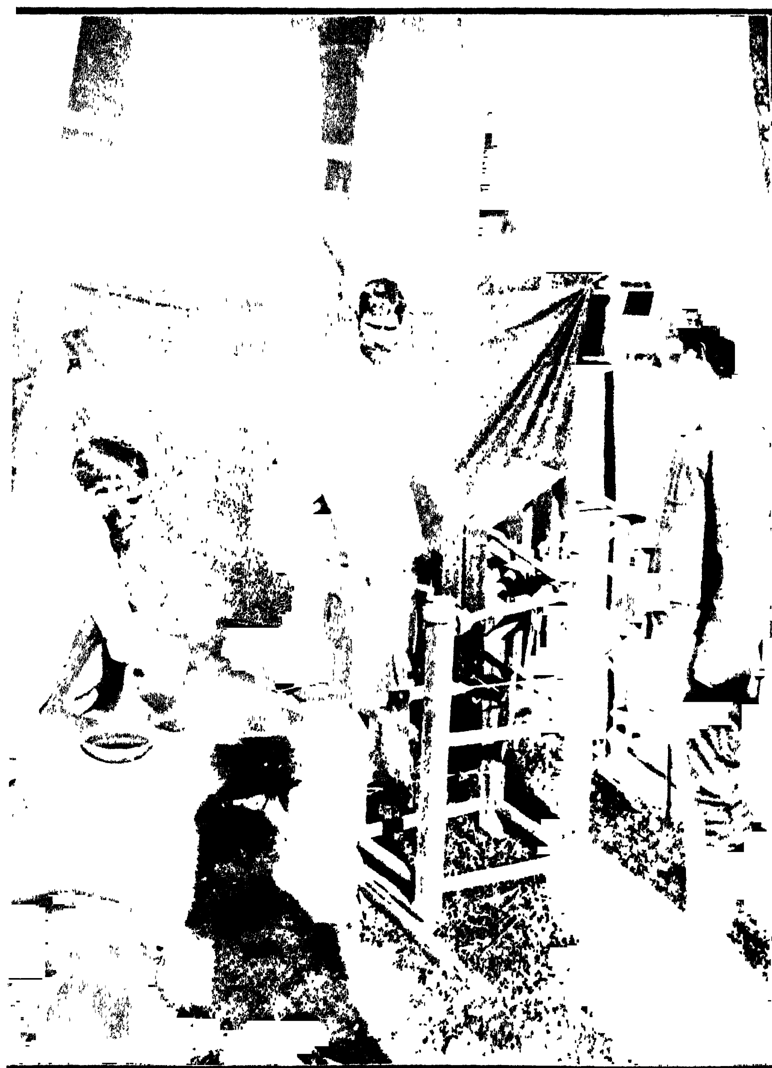
The workshop method of organization is sometimes recommended in India as being more efficient than the cottage system. In this system, the weaver leaves his cottage and works with handlooms in a small workshop under the control of the capitalist.

In the Madras Presidency there has developed a large number of such handloom workshops carried on a large scale and on business principles. The centres of these are Tanjore, Madura, Salem, Coimbatore, etc. Mr. A. C. Chatterji, I.C.S., said of these :—" A number of very promising handloom factories have been started in various parts of the Madras Presidency, and several of the owners assured me that they had found it a good business. Commercially speaking, I may in passing state that the apprehensions entertained in some quarters that the development of the factory system for handloom is likely to depress the weaver socially or morally or destroy his artistic temperament are entirely chimerical. The condition of life for the workmen prevailing in the factories visited are in no way inferior to the conditions obtaining in the home of the weavers, and there is as much scope for the display of his art in the factory as in the cottage industry. The word 'factory' is really a misnomer for these collections of handlooms under one roof, for there is no resemblance whatever between such a concern and a power-loom." Mr. Chatterton, who has been conducting one of these handloom workshops, the weaving factory in Salem, is in favour of the workshop system. He regards the present

artisan method of the weaving industry as hopeless. "One result of our work at Salem is to furnish reliable data for the opinion that the weaver himself is not likely, within any reasonable time, to change his methods of working and take to fly-shuttle loom, and it seems almost certain that in this part of India the factory system will have to be introduced if anything is to be done. The only hope of progress is that outsiders will put their money into the trade, and through their intelligence and energy it will be placed upon a new footing."

But it might be pertinently asked, does not this system reduce the independent artisans to the condition of day labourers under the control of individual capitalists? Will it not to some extent repeat the great evil of the factory system, the exploitation of labour by capital? It is quite plain that such a factory is fundamentally different from and far worse than one owned and controlled by the weavers themselves, and worked on sound co-operative principles. Thus the co-operative methods of organization of the weaving industry are far more desirable than the handloom workshops controlled by the individual capitalists. Again, it might be questioned, what is the need of crowding together so many looms under one roof? *Is the workshop necessary at all?* In the early days of "machinofacture," it was important to transmit motive power to every cottage in the village at a very small cost. In a few decades, if not now, science will enable the weaver in the cottage to use mechanical power as easily as the capitalist does now in the factory, so that by turning a switch the weaver might convert the handloom into a power-loom whenever and for

as long as he likes. If the craftsman has no capital himself, or if co-operative enterprise is still a thing of the future, the individual capitalist might now come forward with his own capital and supply the craftsman with the electric power in his own home. Again, it must be remembered that the weavers' loom is a *one-power* machine, and no advantage can be gained by applying more than a one-man power to it. Thus there is no special advantage in the cheap application of mechanical power. The workshop method, therefore, will not render such assistance as is often supposed, while the cottage system aided by co-operative methods of purchase of raw materials and co-operative sale of finished products promises a rich reward, and is well adapted to the Indian social system.



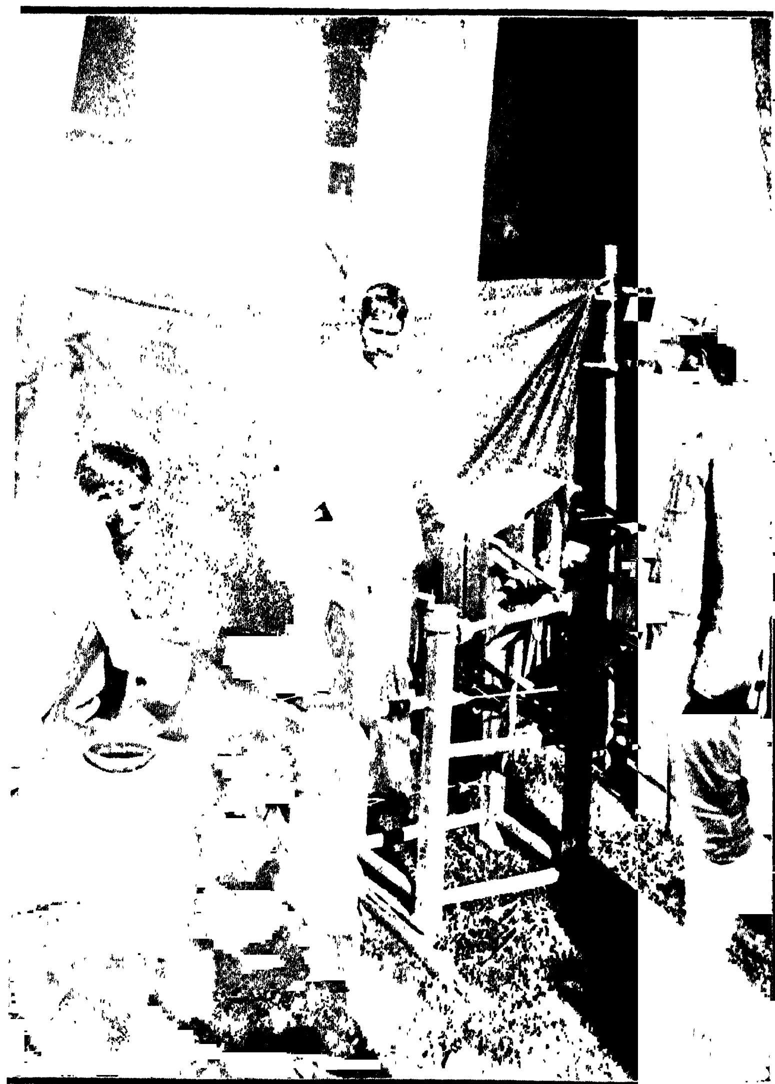
SILK INDUSTRY.

# CHAPTER XII

## THE SILK INDUSTRY

THE silk industry gives occupation to a considerable number of the population in our villages. Those who are engaged in it may be divided into four distinct industrial groups: (*a*) Mulberry growers; (*b*) Cocoon rearers; (*c*) Carders and spinners; and (*d*) Weavers. The method of cultivation of the mulberry and the feeding of the worm require a highly specialized knowledge. There are various diseases which attack the mulberry, and if precautions are not taken the silkworms fed on them are themselves seriously affected. The most serious of the diseases which attack the bush mulberries is the *tukra*, or *keukra* (curled up), caused by an insect (*Doctylopius Bromeliæ*). This can only be remedied by drastic measures.

The Imperial Entomologist, Mr. H. M. Lefroy, says, "There is one effectual and simple remedy which should be enforced as soon as the first 'tukra' leaf is seen. Every 'tukra' leaf and shoot should be plucked, carefully taken from the field and either at once burnt or buried. The present practice of plucking the 'tukra' leaves and shoots and dropping them on the field is the worst thing possible; every mealy bug in those shoots



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kept inside a Handi, or earthen pot, the mouth of which is closed by means of an earthen cover and sealed with mud. The earthen vessel is kept suspended from the roof in a cool part of the house. In the case of the Nistari, Chota Palu and Cheena Palu, the eggs are left on the Dalas on which they are laid, and allowed to hatch there, the hatching taking place in eight or nine days in the hottest weather, and in sixteen or eighteen days in the coldest. The Bara Palu eggs do not hatch till next spring, remaining in the Handi from the end of March to the end of January. After the worms have hatched out, tender leaves of mulberry cut up very fine are sprinkled over the newly-hatched worms. Three or four hours afterwards the worms are moved to another Dala with the help of a little brush made of grass or feathers. The worms with the refuse leaves are then made into a neat flat circle or Chaki of uniform depth of about one-twelfth of an inch, and fresh leaf, finely cut up, is sprinkled over this Chaki. Regularity of feeding is regarded as very essential. The special art in rearing silkworms consists in stopping feeding at the right time, and recommencing feeding at the right time. One often sees an old and experienced woman being called in at these critical periods to judge whether feeding should be stopped, or whether feeding should be recommenced. Women do most of the work in connection with the rearing house, while men look after the mulberry, cut and brought home for the silkworms, and assist the women at feeding and clearing. When ready for spinning, the silkworms cease eating, look about restlessly, spit about silk fibre and appear



FEEDING COCOONS.

transluscent. They are then picked and placed on Chandrakis or spinning mats.[1] These bamboo screens are put out in the morning sun, and in the cold weather fire is kept up in the room at night to hasten spinning.

Cocoon rearers are considered higher in the social scale than ordinary agriculturists, who are employed by them as labourers. They are, however, perhaps more in debt than the latter. Their struggle against poverty is indeed much harder as they are recognized as belonging to the middle and not to the lower classes of our society. Recently there has been a general decline of the cocoon rearing industry throughout Bengal, except in Maldah. This has led also to the poverty of the mulberry growers. In many tracts mulberry cultivation is being given up and other crops grown instead. The production of raw silk has greatly diminished, and a large proportion of cocoon rearers have abandoned their hereditary profession. Various remedial measures have been suggested by experts. Mr. Hart, Director of Agriculture, Eastern Bengal and Assam, submitted an exhaustive report to Government on this subject in 1907. He made the following observations :—

(1) The conclusion of the Special Silk Committee appointed last year, that the decline in the silk industry is primarily due to disease amongst

[1] Mr. C. W. Woodworth, referring to the practice in Europe to furnish the silkworms with brush cut in the winter from trees and bound together in such a way that they may be set upon the trays in rows, suggests that a very satisfactory arrangement can be made of lath by laying them edgewise about three-quarters of an inch apart and backing other laths at right angles across these to hold them in position.

the worms, and not to defects in reeling or manufacture, and that the greatest loss is caused by pebrine, must be accepted as correct.

(2) If worms free from disease can be obtained, silk rearing is more profitable than any other form of cultivation, even more profitable than jute in 1906. This is the universal testimony of the silk-rearers I have met.

(3) By the Pasteur system of microscopic selection of seed, as practised in the Bengal Silk Committee's nurseries, pebrine can be eradicated. The evidence recorded by the special committee leaves no doubt on that point, and my own enquiries have confirmed their finding.

(4) An adequate supply of pure seed cocoons would alone cause a very great improvement of the industry.

(5) Properly constructed rearing-houses and the adoption of certain precautions against the silk-worm-fly muscardine, grasserie and flacherie are only second in importance to the necessity of pure seed.

(6) The Government should vigorously attack the silk question on tried and proved lines by establishing nurseries to supply the seeds required by all the rearers of the province.

(7) The building of a silk-rearing house on approved lines should be declared to be an "improvement" under the Land Improvement Loans Act, and loans should be distributed for improvement of this kind.

(8) For the control of all sericultural operations including loans, a Sericultural Superintendent of the Province should be appointed, and he should

be assisted by District overseers. Other remedies that have been suggested are: (1) Introduction of the superior European or Chinese or Japanese cocoons; (2) Improvement of the system of mulberry cultivation; (3) Better and more liberal treatment of the worms; (4) Taking fewer "bunds" or crops. The Bengal Silk Committee have for some years been distributing seeds among the cocoon-rearers, and their efforts as well as those of their Superintendent, have been very successful in Maldah, while in Murshidabad, the decline of the industry is arrested to a great extent.

The cocoons after they finish spinning are taken down from the chandrakis, and either (1) Taken to the nearest hat for sale, or (2) Killed by exposure to the sun, and reserved for sale until paikars or agents of European filatures come round, or (3) Placed in a basket covered up with cloth under which a pot of water is kept boiling, and reeled off into silk, or (4) If they were formed in a very healthy manner, they are bought for seed by travelling rearers going about in quest of seed from village to village.

After the seeding is done in the house of the rearers there are always pierced cocoons left, which cannot be reeled off into silk like the whole cocoons. These are brought by the poorer women of the villages. They are soaked in a thin paste made by grinding peas with water, and fibres are drawn out of them and attached to the spindle called *teko*. When the spinning of a few ounces of thread is done it is taken out of the teku and gathered on to the *natai*. It is only poor or old and decrepit women who are matka-spinners. Mr. N. G.

Mukherjee has observed that they are usually Muhammadans who attempt to keep up their *pardah* respectability by means of this sedentary toil which brings such poor net return. He has estimated that the total number of matka-spinning women in Bengal is 3000. They are, however, never employed all the year round in this industry. They spin matka only for a few days in every *bund.*

The whole cocoons are spun into thread in villages by means of a machine called *ghai.* They are at first killed by steaming or being exposed to the sun. The steamed cocoons are reeled by first putting them in the basin in the boiling water, and working them with a brush or bundle of sticks, so that each cocoon gets dipped in the boiling water and its end attached to the brush. When nearly all the ends have got attached to this brush they are taken up with the left hand, and with the right hand the cocoons are lightly shaken, so that a greater length of the fibres works off. A few, ten or twelve or so according to the size of the silk wanted, that work off very easily, are then separated out of the whole lot of cocoons in the basin, and these are divided into two equal lots of five or six or ten cocoons, the end of which are passed through the two eyes or holes of the *kal.* These are usually upright wires on the *kal* to keep the two lots of fibres separate during the reeling. These also serve to give *croiseurs* to the fibres, one between the holes of the *kal* and the upright wires, and the other between these wires and the reel. The friction caused by these *croiseurs* agglutinate the fibres together, and make them pass on to the reel as

firm and single threads. There are little twisted wires or guides (khela mastar) on the *khelana* or piece of bamboo, which moves in an eccentric manner on the *janta*. The thread passing through these wires on to the reel do not pass straight to the reel, and get laid on to the reel exactly on the same spot. The movements to and fro of the *khelana* causes each thread to be laid over a width of three or four inches of the reel. Getting laid on the reel in this wide manner, the thread gets dry more easily, and when there is a break the end is also found out more easily.

Mr. N. G. Mukherjee made the following suggestions for improving the reeling process above described:—

(1) The adoption of a reeling machine like that of the Japanese which can be worked by one man.

(2) The adoption of a more vigorous system of *croiseurs* that silk of greater "nerve" may be obtained. At each place in the double *croiseurs* there should be ten or twelve crossings instead of one or two, which is the rule now even in European filatures.

(3) The regulation of the temperature of the basin at about 50° C., and the boiling of cocoons in a separate place in little wire baskets holding four pans of Bengal or two pans of Bombay mori cocoons. The length of time for which each lot of cocoons should be boiled must be determined by an experienced person, who will, according to the value of the cocoons, boil them for one and a half minutes up to seven minutes.

(4) All the raw silk exported from Bengal should be re-reeled.

The indigenous reeling industry is at present considerable. It has been calculated that more than half of the mulberry cocoons raised in Bengal is spun into thread by the indigenous method. The raw silk of export, however, is made in large factories, and more carefully, though in the main the principle of reeling resembles more the old methods than the present methods, which have come into vogue in Italy and France. The principal differences between the local *Khamru*, and the filature methods are: (1) The boiling and heating of water is done in filatures from a central boiler with steam, and not by fire kept under each basin as is done in the native ghais; (2) Silk is reeled to even weights; (3) Crossing of two adjacent threads to give them roundness and firmness is invariably done in filature reeling, though it is rarely done in Khamru reeling; (4) Filature silk is finer.

The country method is cheaper than the European filature method of reeling on account of the following causes:—(1) The yield of Khamru silk is larger; (2) A spinner can turn out three times as much Khamru silk as filature silk; (3) As six skeins of Khamru silk are turned out at a time in some parts of Maldah instead of two, the number of winders required is also less in the case of the Khamru silk; (4) The establishment charges of a European factory are considerably larger.[1] The indigenous industry will

[1] Thus the manufacture of Khamru silk is more profitable to the native reeler than that of the filature silk, notwithstanding the higher price which is or ought to be obtained for the latter. For a maund of green cocoons 2½ to 3½ seers of Khamru silk is obtained, the out-turn of filature silk being about half a seer less in either case.

On an average when a reeler is engaged on monthly pay he gets

receive a great impetus, if the foreign merchants instead of merely putting the filature-reeled silk in keen competition with Khamru silk also recognize the latter as an article of export, and buying up large quantities of it, rewind it, and then send it to the European merchants. At present, however, it is on the decline except in Maldah. Silk reeling is now seldom the only occupation of the reelers. They live also by cultivation and field work. There are only two firms in Rajshahi who now deal in Khamru, one a Muhammadan, and the second a Marwari firm. In Maldah about 2000 maunds of Khamru silk are still produced. The Khamru silk of Maldah is highly prized by native weavers, especially for the weft (Bharna), the weft silk of Maldah usually selling at Rs.12 to Rs.16 per share, which is a rupee higher than the warp or tana silk. Berhampore weavers are said to prefer Maldah Khamru to that reeled in their own district. But more than half of the silk produced in Bengal is sent to other provinces. There are Paikars in villages who buy Khamru for the silk merchants in the town acting as commission agents for weavers of Benares, Nagpur, Mirzapur and Agra, etc. On account of this systematic demand for silk in other parts of the country, the lowering of the value of the Indian silk in the European markets has not led to a sudden decline of the industry in all its branches, still the decline is noticeable throughout the province. This decline of the export trade is

from Rs.6 to Rs.10 a month, and a winder from Rs.4 to Rs.6. In filatures the scale of pay is less, being from Rs.5 to Rs.7 for spinners and from Rs.3 to Rs.4 for winders, but the latter generally receive money in advance and have smaller hours of work in native *ghais*.

due to (1) the competition with Italian, Chinese, and Japanese silks. Italian silk is less in favour in the United States and failed to rise in price, but Shanghai silk on the average gained about 10·2, and Cantons about 16·7. Indian silks are on a much lower scale of popularity, and the exports declined from Rs.58·98 in 1909–10 to Rs.50·55 lakhs in 1910–11. The decline represents 11 per cent. in quantity and 0·04 per cent. in value. Bengal consignments of reeled silk rose from Rs.23·01 lakhs to Rs.23·12 lakhs, the advance representing 2·6 per cent. in quantity and 5·2 per cent. in value. The average export of raw silk between 1870–80 was Rs.8·5 lakhs, it declined to Rs.5·0 lakhs between 1880–90, and to Rs.4·07 lakhs between 1910–14. The export of silk manufactures in 1913–14 was valued at Rs.6 lakhs, as compared with over Rs.17 lakhs on an average between 1890–1900. (2) Disease amongst the worms, coupled with defective methods of reeling. (3) The decline of mulberry cultivation with the introduction of more profitable crops.

Under the present credit system the factory owners advance a lump sum to the Paikar for purchasing a specified amount of the cocoons, the price being fixed according to the current rates in the silk market. The Paikar distributes portions of the money he has got by way of advance among the cocoon rearers either for expenses of growing mulberry or for purchasing leaves to feed the worms. The Paikar then takes the produce and brings it to the factory. On account of the lower prices of silk in the foreign markets, the European factory owners can offer but small

prices for the cocoons. Nor is the demand for Khamru silk among Indian weavers strong enough to direct the sale of the cocoons from this direction. The cocoon rearers cannot carry the produce to distant hats. They grow only a limited quantity, and, perhaps, they have taken advances from the Paikars. So there is no other way of selling the cocoons near at home except to these men who also deduct from the prices a commission for undertaking the sale. The labour of rearing has increased on account of the diseases of the worms. Thus the cocoon rearers while complaining of the inadequate prices of the cocoons have to sell them to the European filatures. The decline of the cocoon rearing industry has, as has already been pointed out, affected mulberry cultivation. The mulberry fields which bore high rates and rent are now lying waste, and in some parts of the province the poor cultivators have still to pay the high rates for the lands which they are not cultivating. The Zemindar will not allow them to surrender the mulberry fields alone. If they are to give these up at all, they should surrender the whole jote which they cannot. Thus they pay the rents though the land is not cultivated at all. The above account of the decline of the industry is true of the whole province of Bengal, except of Maldah, Murshidabad, Rajshahi, Bogra and Birbhoom, and shows a great decadence of the cocoon rearing and Khamru spinning industry.

Before, however, the Khamru silk is employed in the loom, the weaver always unwinds it by means of the Charki. Thus one uninterrupted thread of uniform thickness is gathered on to the

same *Natai*. For manufacturing superior silks the thread is also twisted. These are called Pakwan, while silks in which untwisted threads are used are of poor quality and called Khami. Mr. N. G. Mukherjee has thus described the process of twisting. The *natais* are planted loosely in holes in the floor. The threads are passed through an iron guide called *Loibangri Khunti* firmly planted in the floor; they are then carried up in front of the operator through a bamboo and cane erection called Dol, and then through the first space of the uppermost series of a number of Thaks or bamboo erections, back through the first spaces of the lower series of spaces of the same Thaks, and the second space of the Dol, when the threads are snapped at the iron guide, and a Takur tied at each end, the two ends being then made to hang vertically at equal heights from the floor. Another length of thread is then taken exactly in the same way from the *natais*, passed through the guide, the third space of the Dol, the second spaces of the upper and lower rows of the Thaks and the fourth space of the Dol, two Takurs being again tied at the two ends in front of the operator. In this way seven lengths of threads with fourteen Takurs attached to their ends remain hanging in front of the operator. From the Dol to the last Thak being twenty-seven yards, 378 yards of thread are twisted at the same time by each operator. The distance between the Dol and the last Thak is sometimes more and sometimes less, and sometimes sixteen Takurs are used instead of fourteen. There are usually nine Thaks when the distance between the Dol and the last Thak is twenty-seven yards. The Takurs are

simply slender pins of bamboo with mud weights attached to their bottom, which help to keep the threads straight while the twisting is going on. The operator keeps the rubbing pins of the Takurs successively between the palms of his hands so as to make them spin fast and uninterruptedly which serves to twist the threads. When the Takurs are only nine inches from the Dol, by the shortening of the threads by nine inches, as the result of twisting, the operator considers the twisting done. The seven pieces of twisted thread are then gathered on to a *natai* as one continuous piece by knotting them together. More thread is then twisted in exactly the same way. In the native system of weaving, the weft is never made of twisted thread. The method of twisting above described is nearly the same in all the weaving centres with slight differences in details. Where, however, a separate class of silk twisters, Chambulias, as they are called, has not been differentiated from the weavers and spinners, and the weavers themselves twist the threads, the method is different. The reels of thread are suspended from the ceiling of the house, and the operator who sits below takes down the ends of threads, and joins them so as to form one thread. This joint thread is then twisted with the right hand on the left forearm. As the process goes on, the operator keeps the prepared thread on a thing called *Khatia*, which consists merely of two small upright posts fixed on a block of wood. The thread is arranged on this in the shape of an elongated 8.

The silk weavers are superior to cultivators in social position. They are as a class more prosperous

than cotton weavers, though in the districts where silk weaving is not a speciality silk weaving and cotton weaving are pursued indifferently by the same families as occasion arises, the same looms being used for both purposes. Silk weaving proper is done in all the districts by adult males, the women and children assisting them in preparing the thread and fixing the work.

The threads, twisted or untwisted, are then ready for the next processes. They are bleached and dyed, as required, and then arranged for wrapping. Four posts are planted in the ground forming the vertices of a rectangular parallelogram. The width between the post is such that the length of the work covers two opposite sides and one other of the parallelogram. *Kathis* are then placed singly or in pairs, a yard or two apart from post to post on its three sides. The yarn is then taken in two *charkis*, each of which is provided with a handle called *hulki*, ending in a glass or metallic loop. The threads pass out from the two *charkis* through the two loops and are laid on alternate sides of the *Kathis* and posts. Both *charkis* are used simultaneously by the same person who holds one in each hand, one thread passing by the right of each post or *Kathi* and the other by the left. The *Kathis* are renewed when the warping is completed and tapes inserted in their places. These keep the two *charkis* quite separate during the processes of bleaching and dyeing if the warp is bleached and dyed before it is introduced in the loom. The warp is then rolled up, one extremity is attached to the yarn beam of the loom and the whole warp is wound round it. The next

operation is *Shanparana*, that is, passing the warp through the reed, and the arrangement of reed. The arrangement of reed and the process of forming healds are highly complex and require great patience.

On account of the complicated processes involved, the weavers seldom go in for setting the loom if they are not sure of setting eight or ten pieces of any fabric. This is the reason why they need to spend a good deal of money in advance. They have to buy the silk for all the eight or ten pieces and look out for buyers of all the pieces before they can begin the work. The Mahajan advances the money at a high rate of interest and also assures him the sale of all the pieces at cost price.[1]

If the weavers succeed in selling some pieces directly to the customers, they make some profits out of which they pay the interests on their loans; while the Mahajans who buy from them the remaining pieces at their cost prices, gain large profits as middlemen and continue to be in business relations with the weavers who can give them a steady and continuous supply of their fabrics. We thus see that from the nature of the industry, requiring as it does an investment of capital which is now to be regarded as a large amount if we consider the social position of the weavers, silk weaving is particularly exposed to financial difficulties. As long as the weavers were rich they

[1] More often he advances thread, and when the cloth has been woven it is weighed, a certain percentage being allowed for wastage. Bani (or price of weaving) is paid according to the quality and size of the cloth, and this varies from Rs.3 to Rs.7 per piece (Mr. G. N. Gupta's "Survey of Industries in Eastern Bengal and Assam," p. 34).

could employ their own capital in the industry and were not dependent on the money-lenders. In Benares the silk weavers of the past, besides preparing first-class purely Indian silk work and Saries and Kimkhabs, used to keep a store of silk articles. In those good old days they were both makers and sellers of their articles. The present-day merchants (silk sellers) then only worked as brokers. But now the broker has turned into a wholesale dealer, a big merchant who orders the weavers to prepare things *according to the taste and demand of the public.* As long as the makers were sellers also, they used to make things as their artistic traditional training and the pleasure that a maker or artist feels in his work, inspired them to do. They had their own good old patterns and designs. They had their own dyes and dyeing materials, the deep harmonious Indian colours. The result was that the work prepared was quite superb in every respect and fine and beautiful. From the economic point of view it was a great gain to the country. Thousands of gold and silver thread makers lived affluently in Benares. The silk culture was a living industry.[1] The Mahajans, on the other hand, are not to blame, for they perform indeed a useful economic function under the present conditions of the industry. There is competition among them, and considering the risks involved in the trade the interest they get on their capital is not too high. Still credit has to be made much cheaper if the industry is to prosper. Again, so long as the industry is in the hands of the

[1] Lala Mukundi Lal, "Prize Essay on Trade Guilds in India," *Modern Review*, March, 1911.

Mahajans it is hopeless to expect any art in the wares for long. Their sole motive is to make profit, and they always have those things prepared which suit the public taste. Thus the old indigenous colours of India have been superseded by the dazzling and transient aniline dyes, and the pure gold thread by the fine and brilliant thread of Europe. Again, if superior fabrics are woven the capital has to be locked up for a much larger period than at present. Capital is also required for the purposes of advertising the silk work widely, thus creating a demand for them among the richer people, and also for inducing the weavers to adopt good and fresh designs.[1] This capital has to be

[1] "Many of the silk weavers of Madanapur and Benares told me that they could reproduce any pattern from paper that I would like them to do. But it seems that the initial cost of transferring a design from paper to the cotton thread frame is almost prohibitive" (A. Chatterjee's "Note on the Industries in the United Provinces," p. 46).

In Murshidabad, Mrittunjoy Sarkar, of Gankar, Mirzapore, a clever silk weaver, was asked by Mr. N. G. Mukherjee if he could construct looms for weaving ornamental fabrics like those made by Dubraj, a chamar by birth who was a most famous weaver of the district. After many efforts he succeeded in reproducing the border of Dubraj's shawls and table covers without the corner ornaments. It is by a special arrangement of healds for the borders that he produced his plain shawl with a wide ornamental border, an article which is now highly valued in the Berhampore market. There is now no one in the district since Dubraj's death who understands the mechanism of those looms which are still in use in the Baluchar circle for producing figured fabrics. When any of these looms would get out of order Dubraj was sent for to set it right, but he reserved the neatest patterns for himself.

The necessity of introducing new designs and of teaching the art of transferring them to the loom is now recognized. The services of expert weavers have to be utilized for teaching the art of constructing looms for bringing out new patterns. Even now the art seldom dies with 'the talented weavers, for they do not as a rule keep the patterns for themselves, but teach their own castemen the reproduction of their patterns. In Baluchar, *e.g.*, the weavers recognized

supplied to the weavers at an easier rate of interest.

In Benares the Silk Weavers' Associations, founded in 1906, and registered under Act X. of 1904 as a Limited Company with a capital of Rs.45,000, seeks to finance the poor weavers. It supplies the raw materials to the weavers and receives manufactured fabrics at a particular fixed time. It will thus be seen that the Association is practically a Limited Liability Company acting as silk merchants. The system of payment is really that of piece-work, and it is to the interest of workmen to accomplish as much as possible in the day. The Association is not concerned with apprenticeship, as it pays only for work, instead of for workmen's time. The workmen themselves teach their sons, or employ apprentices on their own account. The apprentices are stimulated to exertion by the knowledge that they can obtain no remuneration until they are qualified to work by themselves.[1] Similar advances of money, looms, or other appliances might be made to the weavers by the Government. In Europe in some countries, *e.g.*, Austria, Switzerland, the government support the artisans by granting them subsidies to purchase the raw materials and the appliances of production. But the best method of financing the weavers is through the establishment of Co-operative Unions.

Mrittunjoy as their master, as he was the means of introducing many improvements in the silk-weaving industry at that centre. "The caste system viewed in the light of a trade guild is a great lever for industrial improvements in this country, and any system of technical education that may be introduced in the country should fully utilize the existing system" (Mr. N. G. Mukherjee's "Monograph on the Silk Fabrics of Bengal," p. 42).

[1] Mr. Mukundi Lal's "Prize Essay on Trade Guilds in India."

The Government has recognized the necessity of Co-operative Societies among the industrial classes, and steps are being taken by the registrars to pioneer such societies among the weavers in the different provinces. Many such societies have been established, and they have done immense good to the weavers. As Mr. G. N. Gupta, M.A., I.C.S., says, "The introduction of Co-operative Credit Societies amongst weavers which has been so successfully tried for the silk weavers of Benares, for weavers of Solapur in Bombay and in parts of Madras, stands out as the most suitable means for improving the financial condition of the weavers and of teaching them habits of co-operation, self-reliance and self-help, which in themselves will be valuable assets in bringing success to their occupation."[1]

Murshidabad is the centre of the silk-weaving industry of Bengal. Various kinds of fabrics are woven in the district, such as Motka Dhuties and Saries, Alwans or thick Chadars, silk Musleens and *Hawai Dure*, Chelis, Namabolis, etc., which have a great demand in the local market. Gown-pieces are in demand among the European ladies and also among Bengal gentlemen for making chapkans and chogas. Corahs are the cheapest fabrics forming the staples of export to Europe, where they are used mainly for lining purposes. Bootidar Saris are woven in Baluchar; some are very decent, but the ladies of the rich and middle classes prefer the Benares fabrics. Ornamental silks, Rumals and Shawals, Scarps and Sashes, are also made to order from the looms set by Dubraj. These are inferior

[1] Mr. G. N. Gupta's "Survey," p. 23.

only to the best patterns of Kashmir and Benares looms, but unlike them they can stand any amount of washing. Mr. N. G. Mukherjee has remarked: "It is too late to think of reviving the industry of weaving ornamental silk fabrics, as the only man who could be used to uplift this industry is now dead. The only hope of reviving the industry now rests in the fact that Dubraj's looms are still in existence." In other parts of Bengal Maldah, Bogra, Birbhoom and Rajshahi, Silk Saris, Dhoties of silk or Motka, handkerchief, pieces of coating, uranis made of silk or of mixed silk and cotton, are manufactured and command a good sale. The demand for silk fabrics is increasing, and will continue to increase in the country with a steadily rising standard of life of the people. The increased demand, however, is satisfied to some extent by the Japanese and Chinese silks,[1] the imports of which have been increasing for some time. It is only a vitiated taste that prefers the gaudy and brilliant fabrics to the pure and lasting silks of the indigenous handlooms.

The working of the looms from which figured patterns are made is highly complex. The following is a description of the working of a loom used for weaving bootidar saries in Baluchar, given by Mr. N. G. Mukherjee, which shows the cleverness and ingenuity of our weavers who manipulate it. The cloth beam is placed on two pillars or platforms, the weavers sitting on a plank resting on

[1] Silk piece goods representing Rs.178·93 lakhs were imported in 1910–11, the increase being 16·4 per cent. Japan sent goods to the value of Rs.104·96. The imports of China show an advance of Rs.5·46 lakhs, and stand at Rs.52–56 lakhs (Paton's "Review of the Trade of India," 1910-11).

the same pillar alongside the cloth beam, his legs going between and his feet working the treadles which are fixed in the floor at one end, in the same manner as the treadles are fixed in the pit in the case of an ordinary loom. The work beam is also placed on the floor, being slightly elevated with pivots. Thus the work runs up in a slant from the warp beam to the cloth beam, instead of horizontally, as in the case of the ordinary loom. The use of four healds where two only is essentially necessary has been already mentioned. The essential peculiarity of the *Naksha*-loom consists in the presence of the Shirak, or a large number of strong twines, running across and above the warp just beyond the healds. Each of these twines is attached below to a certain number of the threads in the warp by means of long loops of strong cotton suspended vertically from the twines and allowing one, two, or more warp threads to pass through each, according to the figure intended to be brought out. Above the frames are attached two *Nakshas*, or sets of harness cords, which the weaver sitting behind the frames on an elevated platform manipulates, thus bringing up each time a number of twines which in their turn raise by means of the loops the required threads of the warp. At the same time two *nanglis*, or plough-shaped wooden wedges, suspended from the ceiling with ropes are thrust in by the weaver among the twines. He then passes the little sticks called *shirkis*, charged with coloured weft threads, through the "sheds" among the whole width of the piece, corresponding to the *buts* or figures. When the coloured threads for the *buts* have been once passed, the *nanglis* are

withdrawn while the reed is pressed home to the web, the treadles worked and the shuttle passed once to lay one thread of the ground weft. The reed is again pressed, and then the draw-boy manipulates the cords of the *nakshas* which govern the elevation of the warp for the two borders only. The *nanglis* are again thrust in to bring the two sheds on the two sides (for the borders) distinctly up, and then the two sticks with coloured threads meant for the two borders are passed through the shed once. Another weft thread for the ground is then put in with the shuttle. These three sets of operations go on throughout the weaving. As a rule there are two *nakshas* for the borders, two for the *buts*, two for the *anchala* or the ornamental end-piece, and one for the beginning and finishing up. The draw-boy manipulates a harness cord for the *buts*. At the next operation, viz., the putting in of a weft thread for the ground, the draw-boy does nothing; then the draw-boy manipulates a harness cord for the border while the weaver puts in a thread for the border. At the next operation the draw-boy does nothing, while the weaver passes the shuttle to put another weft thread for the ground. At each operation, therefore, time is spent by the weaver not only in his own manipulations but also in watching those of the boy. For richer designs as many as fourteen *nakshas* are sometimes employed. It is easy therefore to imagine how a piece of five yards long and forty-two inches wide can take as much as six months for a weaver and his boy to weave, beginning at the adjustment of the loom, and ending in the completion of the first piece, and sometimes twenty pieces are

turned out before a re-adjustment of the loom is allowed.

These looms are highly suited for weaving the fabrics for which they are meant, and the fact that there are as many varieties of looms as there are patterns of weaving shows that silk weaving is a living industry.

# CHAPTER XIII

## TASSAR AND ENDI REARING AND WEAVING

WE have hitherto been dealing with silk weaving as distinct from tassar or endi weaving. Tassar weaving is a considerable village industry. It has been calculated that there are nearly 25,000 persons in Bengal and 20,000 in the Central Provinces who are more or less dependent on tassar weaving. The number of persons concerned in tassar-cocoon rearing is roughly estimated to be about eight times the number of those engaged in weaving. Tassar rearing differs widely from ordinary silkworm weaving, in that the ordinary silkworm is a perfectly domesticated interest, whereas the tassar worm thrives best in the jungle. The ordinary silkworm eggs have to be kept up for ten months, from March when they are laid till January when they are allowed to hatch out, whereas tassar eggs are laid irregularly, some in May, some in July, some in October, and the Muga might not eclose for a whole year.[1]

Tassar-cocoon rearing has been declining for some years in Bengal. Mr. N. G. Mukherjee has pointed out that the degeneracy of tassar-worms is due to (1) inferior cocoons (small size and flimsy in structure) being purposely reserved for seed, owing

[1] Mr. F. Smith, B.Sc., "Tassar silk cocoon rearing at Chaibassa,' *Agricultural Journal*, January, 1909.

to the superior cocoons fetching a higher price, and (2) semi-domestication and the use of home-grown cocoons for seed instead of wild ones.[1]

Rearers formerly used to go to the jungles every third or fourth year to get the supply of new seeds, but they have not been doing this for the last ten years. This has led to the deterioration of the stock. To prevent this degeneracy, the Government Chaibassa firm take in every year the wild muga seed, and domesticating it for one year issue the seed to rearers, who can have then no scruples as to the uncertainty of the eclosion, as by domestication the moths eclose regularly in May and June. Mr. Smith has given some figures regarding tassar sericulture. From 60 trees if well managed and watched we can get three kahans of cocoons. As one pollards the trees every second year, to obtain three kahans per annum 120 trees will be required. At Rs.7 per kahan of cocoons the annual income from 120 trees will be Rs.2. For taking *ara* or permission to grow cocoons in the village some payment has also to be made. Thus the rearers have found that the firewood is more paying than the cocoons, so many trees are being killed by over-pollarding. The decline of tassar-cocoon rearing is due to low prices now obtaining for tassar silk. One kahan of cocoon, which costs Rs.7, gives one seer of tassar silk, the price of which in the present market is Rs.9. Now, the cost of tassar reeling in the factories is 13 annas per *kahan*, thus the cottage reelers can have but little profit if they have to buy the cocoons at Rs.7

[1] "Inquiry into the state of the tassar silk industry, Bengal," Mr. N. G. Mukherjee, 1905.

per *kahan*. Thus the cocoon-rearing industry is ultimately affected. At present it is placed only in the hands of the old women and the children of the villages. If tassar rearing becomes a success Bengal might compete with China in the export trade in tassar silk; at present, however, Bengal's share in the trade is almost negligible. While China exports to Europe 20,000 to 50,000 bales of tassar silk annually, India exports only 333 bales.

The tassar manufacturers belong to the same social position as the silk manufacturers. In fact, the same men often take up both the industries in their hands. Winding and warping are done entirely by women. Tassar silk is washed in soap with cold water. It is generally coloured red and violet with aniline dyes; yellow colour is sometimes made from turmeric and Kamala powder. Tassar *saris* and *dhuties* as well as suitings for the use of the rich and the middle classes are largely woven and are in great demand. Borderless tassar cloths are largely used by poor Hindu widows during religious and festive ceremonies. *Kethe* is a worse kind of fabric made of pierced tassar-cocoons. *Bapta* is another sort of fabric differing from tassar in that the warp is all tassar and the woof cotton.

In Assam endi and muga silk weaving is a part of the occupation of almost every female. The poorer people of Assam had formerly been exclusively clad in eri silk, while the muga silk is in great request among the middle and upper classes. Mr. Darrah, who wrote a note on eri silk, said: "The climate is an ideal one for the growth of silk. The food of the worm is almost a weed in many parts of the province, and actually a weed in others.

The worm is exceedingly prolific, and the labour required for rearing it is such as can be given by the decrepit and infirm members of the family. The produce required needs no skill in handling; reelers are not wanted; nothing but the empty shell from which the chrysalis has been extracted or the moth has escaped is asked for in England, and for this commodity the demand exceeds the supply. It is difficult to imagine a combination of circumstances which promise fairer for the commercial success of any commodity." The eri worms are bigger and much more hardy than the silk-worms, and they feed on the leaves of the castor-oil plant—mulberry is not a food plant. The cocoons cannot be reeled. For the purpose of spinning thread the cocoons are boiled; after three or four days they are washed clean, one cocoon is then turned inside out and put like a cap at the end of a small wooden stick called *katki*. Another cocoon is treated in the same manner and capped over the first, and so on; this forms something like a knob at the end of the katki. The woman holds the katki in her left hand with the knob downwards. Some fibres are then pinched and drawn out of the knob and twisted by an instrument called tanka. This tanka consists simply of a bamboo rod fixed at the centre of a circular piece of stone or broken pot. The bamboo rod has a catch at the other extremity, and is fixed firmly to the stone piece. The end of the thread to be spun is tied with the rod and wound round it a number of times. Then the whole thing is given a vigorous turn by the two fingers of the right hand. The tanka being suspended by the thread

goes on twisting it, the heavy thing below serving the purpose of a fly-wheel. More fibres are pinched up and added on to the thread, which is drawn out, and the twisting goes on.

The thread is then transferred from the Tanka to the Natai. This is of peculiar construction, being a forked branch of a tree across which is tied a bamboo rod. It is then again transferred to the Charki. The next processes, warping, putting threads through the Shane, forming the healds, and fitting up and working of the loom, resemble with but little differences those of the ordinary weaver.

The spinning process is most primitive and requires to be improved. As regards the manufacture of cloth it is said that the best way of improving the quality of the fabric is by introducing drill-weaving, so that the cloth will be more substantial and be better suited for suitings, etc. It has also been suggested that if any other fabrics be mixed with Endi, the fabrics turned out would have a stiffer structure than the present Endi has, and it will be possible not only to sell the Thans cheaper but they are likely to be more popular with the public.[1] At present, however, the Endi Thans are comparatively high priced. A Than of six or seven yards, with a width of fifty-four to fifty-six inches, of good quality, cannot be had for less than Rs.25, while the Benares Endi of the same quality sells for Rs.16 to Rs.18.

Mr. Maxwell Lefroy, imperial entomologist, thinks that there is a large field for the extension of eri, as a minor or home industry, wherever castor grows in India. The seed is obtainable and is

[1] G. N. Gupta's "Survey," p. 27.

readily sent by post to all parts of India; the rearing is simple and can be done on a small or large scale once it has been seen; the production of thread and cloth offers no difficulty to people accustomed to spinning and weaving cotton, and there is no inherent difficulty which could prevent its adoption in all parts of India where castor is grown and where the climate is suitable. Indeed, the industry is being taken up in different parts of India, and wherever there is a demand for light remunerative work, such as can be done by women and children, if castor is available, the rearing, spinning, and weaving of this silk offer many advantages.[1] Again, it is also pointed out that it will not pay to simply grow cocoons and sell them unless there is a definite market. The spinning is as important as anything else, and if there are not people to do the spinning as a spare-time occupation in their own houses, the cultivation of eri silk should not be undertaken at all. Where the spinning can be done and a cottage industry is possible, sufficient cocoons for the year should be reared either all through the year, or else for nine months of rains and cold weather which are not excessively dry and hot.[2]

Commercially, Muga is less important than Endi. The silk is superior in quality, but it is too dear for the European markets. The cocoons intended for breeding are placed in trays and hung up safely in mud-wall houses. The female moths, which come forth in a fortnight's time, are secured by threads, passing the thread behind the wings and tied to

[1] *The Agricultural Journal of India*, April, 1908.
[2] *Ibid.*, April, 1910.

short lengths of straw hooked on to a line stretched across the room. The eggs are stored in baskets covered with cloth, and the room in which they are kept is heated in winter but kept dark as much as possible. In summer it is not necessary to retain the eggs within doors at all. The worms are fed on trees, and when they have devoured the leaves they descend of their own accord. They are then caught by a trap of straw or plantain leaves tied around the stem. Much care has to be taken to protect the worms against the crows, kites, and many other birds by day and owls and bats by night; thus abundant and continuous employment is afforded to young, old, and infirm members of the family.

The insects within the cocoons are killed by exposure to the sun or by fire. The filaments are rolled together between the palm of the right hand drawn across the thigh, while the left hand works the reeling apparatus. Almost every part of the Muga cocoon is utilized. The Muga silk had until recently been the material of dress for the middle classes of Assam; even now there is much greater demand for this there than for Endi cloth. Muga Thans are used for making suits and exported to Dacca, Calcutta, and a few other places.

# CHAPTER XIV

## DYEING

THE industry of dyeing has formerly been very important in the country, but there has been a very rapid decline during the last decade on account of the importation of aniline and alizarine dyes from the West. These have become very popular, not only on account of their cheapness and their brilliant colour, but also because of the ease with which they can be used as compared with the complicated process of the indigenous dyeing.[1] Still the process of dyeing cloth with indigenous dyes is carried on in the rural tracts of our country largely to meet the home demands. The important indigenous dyes

[1] The influence of these modern mineral dyes has been more destructive to the tinctorial and textile industries of India than is commonly supposed. They have depraved the artistic feelings of the people and demoralized many of the indigenous crafts. . . . "It has been computed that there are at present 2000 distinct colours of this kind offered for practical use, the manufacturers of which are often prepared to send expert dyers to the workshops of their customers in order to instruct the operatives in the technicalities of the dyes they sell. Recently it has, moreover, been proposed that a 'keyboard' of colours should be established, with fixed numbers for each shade, so that the buyers of Indian goods may be able to dictate the colours to be used. This may be desirable for certain commercial transactions, but with the art-crafts it is likely to be pernicious. All the famed natural dyes and tinctorial combinations of India have been already imitated and their vernacular names given to the fabricated coal-tar preparations, so that nothing is left undone that could expedite the complete overthrow of the indigenous crafts."

which have survived the competition with the synthetic dyes of the West are (1) Indigo. The cloth is dipped three or four times in a solution of indigo with *Sajjimatti*, lime and molasses, and then dried in the sun. The plant is steeped in water in a vat, and heating is effected in various ways with short sticks to the ends of which flat discs are attached, or with wheels consisting of wood attached to the ends of a number of spokes radiating from the axle. After the beating is complete, the liquor is allowed to stand until the precipitated indigo is separated by means of a canvas filter. It is suspended on a wooden filter frame in the form of a bag called *Majikat*. (2) Lac. Lac is dissolved in water to which is added *Sajjimatti*, and some Ladh (*Symplocos racemota*) powder. The mixture is boiled. The cloth to be dyed is immersed in the boiling liquid, and then left to dry in the sun. A fast red colour is thus obtained. (3) Turmeric is finely powdered and mixed in water with *Sajjimatti* and alum or lemon. The solution is boiled and the cloth immersed in it while hot. The cloth thus gets a deep yellow colour. (4) *Kusum*. The florets are dried in the sun and placed on a basket filter. Cold water is poured over. This removes the useless yellow dye. When the water passes through, some *Sajjimatti* is added to the florets to dissolve the red colouring matter. The florets are then pressed into cakes and water is added. The solution is of a brilliant red colour. A little lime juice or tamarind is added to neutralize the effects of the *Sajjimatti*. (5) *Bilati-Haldi*. The seeds are used for the preparation of a yellow colour. The seeds are boiled in water to which

*Sajjimatti* is added. Silk is usually dyed with this dye. The colour is made fast by steeping the cloth in Babul solution, obtained by boiling Babul-bark in water, before and after the immersion in *Lotkan* water. (6) *Harasinghar* and *Palas* flowers are also boiled in water, and the cloth is dyed by being immersed in the infusion. The *al* wood powdered and boiled in water yields a fast red colour. Saw-dust of *Kanthal* or Jackwood, mixed with leaves of the Bakash plant, and boiled in water, gives a yellow colour. The fruit of the *Haritaki* mixed with water and *Hirakosh*—proto-sulphate of iron—gives a black colour.

Mr. Watson has pointed out that it is a mistake to think that all indigenous dyes are fast—in fact, most of them are fugitive. On the other hand, all chemical dyes are not fugitive. Besides, their fastness is being steadily improved by chemical processes. Thus we can clearly see why the indigenous colours are being gradually superseded by the aniline dyes.

The demand for coloured cloth is considerable in the country.

Coloured head-cloths (*Dopatta*) and small caps are in great demand among the Hindusthanis. Shirts chiefly dyed blue are used by Muhammadan *Khalasis* (Sailor) and *Vistis* (water-carriers). Dhutis or cloths are generally dyed in Sunkh Kusum (deep red), Subuj (green), Kakreja (maroon), Narangi (orange) and Glabi (rose), and are in great request in the zenana. In Bengal it is only the girls that wear coloured cloths. In Behar, however, they are worn also by elderly women. The Muhammadans as a rule favour

coloured cloths more than the Hindus. Silk cloths, gown pieces, and Chaddars are also dyed in various colours. Threads are dyed for making shawl scarfs. Wool is dyed for the manufacture of blankets. Quilts and *Balaposhes*, bed-sheets and pillow-cases are also largely dyed. In the cloth and silk industries the dyeing operation had formerly been specialized, being performed by the *Rangreza* or professional dyer. As regards cloth his services, however, are but seldom required now. The cloths are now dyed by the cheap imported dyes by the men who want them, and though their colour is fugitive it does not matter much because the cloth they wear do not last long. The cotton weaver also purchases these yarns ready dyed, or dyes it himself with the chemical dyes. The case is the same with the silk weavers as well. Mr. A. Chatterjee has remarked: "This abandonment of the system of division of labour is a retrograde step, for an expert silk weaver's time ought to be more valuable than that of a dyer, while the former can never have the same specialized knowledge as the latter." The work of the professional dyer is thus requisitioned only when blue or black colours with vegetable indigo is required. Even here the synthetic indigo competes with the vegetable dye. Thus, industrially, indigenous dyeing is almost dead. In Eastern Bengal, Mr. G. N. Gupta found Pubna to be the only district where yarn was dyed locally for borders of Saris and Dhutis. The colours produced are two: black and red. For black, vegetable indigo was being used, and for red aniline powder. There are two grades of black dyeing. For the first the yarn is successively

soaked in the vegetable dye two or three times till fast colour is obtained. The *Bani* or rate charged by the dyers for dyeing, according to the above process, is Rs.2–8. And inferior black is obtained by first steeping the yarn in aniline red dye, and then into the pot containing the vegetable indigo. The result produced is a comparatively unstable kind of colouring, and the price charged is from As.12 to Re.1 per bundle of five seers. In Murshidabad, there are four families of indigenous silk dyers, but they have been adopting the aniline dyes. In Shahpore and Sibgunj, Maldah, silk yarn is dyed locally. In the Khashi Hills and among the Manipuris and the Turungs, however, indigenous dyes are still used to a very large extent.

The industry in cotton, silk, and calico printing is also carried on to some extent in Monghyr, Patna, Gaya, and Calcutta. This is done entirely by hand. There are wooden blocks fitted at the back with handles of tamarind or Shesham wood. The patterns are mostly floral or geometrical. The paste used for stamping is prepared differently. After the stamping is over, the cloth is soaked in *manjista* or al water and boiled.

Women are specially skilled in the process of dyeing cloths for their daily wear. The cloth is folded, and in some spots tied up with threads in the form of screws. This requires much ingenuity and practical skill. The cloth is then dyed. When it is dried, the knotted parts of the cloth remain white while the rest of the cloth gets the colour.

# CHAPTER XV

## THE LEATHER INDUSTRY

EVERY village has its shoe-makers and shoe-repairers. The chamars and the muchis are all Hindus excepting a few Muhammadan muchis. In Bengal the Patna division has the largest number of chamars, and after it comes the Bhagalpur division; while the Presidency division has the largest number of muchis, and next to it the Burdwan division. The majority of these, however, are also engaged in agricultural pursuits, in "provision and care for animals, menial service, dealing in food and drink, weaving, working in metals, wood, glass, stones, canes, bamboos, leaves, etc." The following statistics show the number of persons at present engaged in the various branches :—

| | |
|---|---|
| Leather dyers | 141 |
| Shoe, boot and sandal makers | 153,432 |
| Tanners and curriers | 22,323 |
| Water-bag, well-bag, bucket and ghee-pot makers | 657 |
| Harness makers | 15 |

The articles manufactured by the muchis in the town consist of :—

| | |
|---|---|
| Nagra shoes | As.8 to Re.1 |
| Shoes for the middle classes | Re.1 to Rs.3 |
| Boots | Rs.3 to Rs.5 |
| Slippers | As.6 to Rs.1-4 |
| Bags for drawing water | Rs.3 to Rs.5 |
| Leather straps for fastening to the ploughs | As.2 |

Musical instruments :—

| | |
|---|---|
| Dugi | As.12 |
| Tabla | As.12 |
| Khole | Re.1 to Rs.10 |
| Khanjanai | As.4 to As.8 |
| Mridanga | Rs.4 to Rs.5 |
| Dhak | Re.1-8 to Rs.10 |
| Mandar | Re.1 to Rs.2 |
| Native saddles | Rs.8 to Rs.10 |
| Bridles | Rs.2 to Rs.4 |
| Hide ropes | Rs.10 to Rs.12 |
| Water bags | Rs.3 to Rs.5 |

Calcutta, Dacca, Murshidabad and Vishnupur are the centres of the manufacture of these musical instruments. The principal centres of the shoe-making industry are Cuttack, Patna, and Saran. In most of these places decent slippers and shoes are made. The muchis here are better workmen, and as they use in most cases foreign leather they turn out goods with better finish. Saddles and bridles as well as harness for hackney carriages and ekkas are also made in these towns.

The indigenous shoes are often elaborately embroidered and even jewelled. They are sometimes veritable works of art considered from the point of view of ornamentation. Embroidery in gold and silver thread, both genuine and imitation, is applied not only to the upper, but in some cases even to the inside of the shoes and slippers. But this industry is now decaying, as the shoes are now forsaken for leather foot-wear from Europe.

The muchi gets the skins of the animals from the villagers whose animals die naturally. He often undertakes to supply the zemindars with shoes on condition that he can get all the dead animals throughout his estates. Sometimes he

takes lease of the "baghars," where carcases of dead animals are thrown. The cess he has to pay per month is As.8.

The muchi's methods of tanning are primitive. The following materials are generally used by him in the tanning process: lime, amlaki, haritaki, babul-bark and pods, myrobalans, etc.; of these babul-bark is chiefly used, being very cheap and abundant. The leather is steeped in water in which these substances are mixed for a whole day. The water is then boiled over a slow fire. The chief defects in the indigenous process of tanning are found to be: (1) Over liming. (2) Antiquated tools for fleshing and removing the hair. (3) Insufficient attention given to bathing. (4) The actual tanning period is too short, and the process is not properly graduated. (5) Very little attempt at currying.

Often, however, the muchi does not tan the leather, but purchases tanned leather imported from Calcutta. The demand for shoes in the country is usually of the European pattern. Thus the muchi usually uses leather tanned in Calcutta, Agra, or Cawnpore.

The instruments which the muchi uses are: (1) The *piri* or wooden board, or the sil or stone on which the leather is planed. The *bangua*, which is a wooden rod, is used in planing. (2) The chisel, *khurpa* (big) and *khurpai* (small), for cutting or finishing (*chant*) leather, and gaining the edges of the sole. (3) The *lohia* or the pounder. (4) The sewing and boring pins. These are of various kinds. The borer is called *pegel*. The needles are called *katari*, and are *mag jal*, broad, *tejal*,



SHOEMAKERS AT WORK.

middling, and fine, *mihi*. The *albet-katari* is the needle used for sewing with hair. (5) The *dhaplening*, which is a small square made of horn used for making the leather before cutting. (6) The horn to keep lard in. (7) The *srishtak* and *dhap* for applying lard to the lowest upper edges of the sole. (8) The *ghirudhap* and *jhikur* for pressing and making the edges of the heel and the sole. (9) The *haddibom*, which is a small rod of bone used for polishing when lard has been applied to the heel and the sole. (10) The last of small size is called the *bochani*, and that of larger size called *barapatra*. (11) The *jharnura* and the *ring-chapri* for boring and fitting the rings or hooks. (12) Hammer, *lohia hamor*.

The muchi manufactures shoes, usually getting money in advance from the mahajans, who are the shop-keepers. Leather manufacture, like all other cottage industries of the country, is thus mainly in the hands of the middlemen. One muchi exemplified his relation with the middleman by repeating a proverb very common among the fishermen, *jeler parone tena, layoner kane sona*. (The fisherman wears rags while the middleman who becomes rich on his account wears gold ear-rings.) The muchi receives either money or tanned leather from the mahajan, who has a shoe-store in the locality. The system of *dadan*, as usual, is very disadvantageous. Thus for Rs.50 advanced by the mahajan, the muchi would give him within the period of a month twenty pairs of shoes. These are sold by the mahajan at Rs.3-8 per pair. The mahajan thus makes a profit of Re.1 per pair of shoes he sells. For every pair of shoes worth Rs.3-8 he gains

approximately Re.1, 10as. for shoes worth Rs.2-12, and 12as. for shoes worth Re.1-8.

Only a system of industrial co-operation among the muchis can prevent the present exploitation. There should be organized co-operative societies among the chamars, giving credit cheaply or advancing tanned leather, and more improved tools and implements on better terms. Tanning establishments might be conducted on co-operative lines, and expensive and up-to-date methods and processes which are beyond the scope of an individual muchi might be introduced in them. Co-operative sale societies should also be organized. They will sell the products of the industry on much better terms than at present, and thus be a boon to the artisans. The caste-organization is very strong among these people, and there is no reason why the co-operative idea will not take strong roots in the community if it is preached sympathetically amongst them by our educated classes.

The head muchi usually employs several apprentices and workmen who are generally paid by piece-work. The wages they usually get vary from 8 as. to Re.1 per pair of shoes. They usually take nearly two days to finish a pair. The head artisan gets approximately Rs.15 a month, an income which must be considered to be very inadequate, if we think of his hard and continuous work throughout the day. The condition of the industry is gradually becoming worse. Not only the system of dadan, and the difficulty of obtaining capital, but other causes also have been working against the muchi. The muchi and the chamar hold almost the lowest places in the social and religious scale

of society. They are the "untouchables," and in order to avoid them their quarters are invariably assigned on the outskirt of the villages. The female chamar is usually a mid-wife, this occupation being considered to be most degraded, though the female muchi never follows it. She makes baskets, brushes, mats, etc. The leather industry being thus the monopoly of a degraded special caste, suffers from the loss of invigorating competition and popular sympathy. Indeed, in view of its present position of degradation and neglect, one often wonders how the muchis oftentimes cut boots and shoes of very good finish, which might compare favourably with those made in the tanneries though their prices are higher. Again, some of the tools and implements are up-to-date and imported from Calcutta, a fact which reflects great credit on the muchi, when we remember that obsolete tools and implements are still in use in cottage industries in the hands of higher and more honourable castes. Another cause which has greatly affected the leather industry is foreign competition. The price of leathers has greatly increased, almost 50 per cent., on account of their import to foreign countries. With the imported leathers the foreign manufacturers send out to this country their finished goods to compete with locally made shoes. The exports from Bengal of raw hides were 357,794 cwts., East Bengal and Assam supplied 234,810. Of the total value of the foreign exports in dried and pickled skins, Calcutta contributed 75·6 per cent. in 1904–5. In the "Review of the Trade of India," it is shown that the prices of hides rose steadily during the preceding four years, the average price for

1904–5 being 11·4 per cent. in excess of that of the previous year. The corresponding price of skins fell 13·1 per cent. The Review for 1905–6 states that the price of hides continued to rise, the average value per cwt. increasing from Rs.52-4-8 in 1904–5 to 55-7; while that of skin continued to fall, viz. from Rs.91-1-6 per cwt. in 1904-5 to Rs.90-7-1. Superiority of leather and shape and a moderate price prevail, so the local manufactures are losing ground. The imports of boots and shoes from abroad into Calcutta have been increasing :—

| | 1902–3. | 1903–4. | 1904–5. | 1905–6. | 1906–7. | 1907–8. |
|---|---|---|---|---|---|---|
| Lakhs . | 9·01 | 9·59 | 12·86 | 10·93 | 6·41 | 6·40 |

Superiority of leather and shape and a moderate price must prevail, so the muchis are losing ground, and are depending for their living on mending foreign shoes and other leather articles, or by working as agricultural labourers, musicians, or grooms.

Leather industry has come to be essentially a large industry on account of certain recent improvements; indeed, the cottage system under the present conditions of the industry must sooner or later be confined to the manufacture of ornamented shoes, the working of tinsel or leather, the manufacture of purses, artistic leather cases and blotting pads, bookbinding, etc. In these art-industries in leather there is an ample scope for the small scale organization, which is likely to be extended as the big industry gradually monopolizes the manufacture of boots and shoes. While the place of the cottage system in these art-industries is assured, the large scale organization will inevitably supersede the cottage system in the manufacture of ordinary boots

and shoes. From being an industry in which time and capital had to be locked up almost indefinitely, tanning and leather manufacture may now be spoken of as characterized by a rapidity of production and a turn-over hardly equalled by any other branch of manufacturing enterprise. From being essentially a craft for manual labour, every stage in the tanning of leather and the preparation from it of the most artistically finished boots are accomplished by complex and intricate machinery. There is no necessity of retaining hides and skins for a protracted period subject to the slow action of some vegetable tanning material: rapid chemical methods (*e.g.* the chrome process) by mineral salts and even aided by electricity have been called into existence and adopted with avidity by the trade. The indigenous tanner with no capital and skill who pursues crude methods and continues to employ defective appliances can no more hold his own against the cheap modern methods. Indeed, the change in the character of our exports of hides and skins to foreign countries points to the urgent necessity for the adoption in India of the scientific methods and processes which are in vogue in western countries. For some years Madras has been carrying on a good export trade in tanned skins. The United States of America have hitherto been the most important market for the Madras skins, but within the past few years the export traffic in dressed goods has fallen back and the demand for Bengal raw skins advanced considerably. In 1904 the export of tanned skins was approximately one-half the value of the traffic five years previously. This transference of the trade from

tanned to untanned skins shows that the so-called tanning of India is so imperfect that re-tanning is essential, and this is likely to proceed in an accelerated degree (to the great detriment of the Madras trade) unless new methods are introduced. Indeed, the industry in India is now conducted according to most inefficient and uneconomical methods. If the industry had been established on a sound economic basis, it would not and could not have suffered; for all the natural conditions are in its favour, including abundant supplies on the spot of skins and tanning substances and cheap labour. These advantages, however, were not effectively utilized in consequence of the absence of capital, for tanning is essentially an industry in which the possession of large resources counts for much.[1] The position, however, may be rectified without difficulty if capital is forthcoming; and if it is desired to prove that tanning is a profitable industry, it may be observed that where it has been undertaken in accordance with sound principles, as in the leading tanning establishments in Cawnpore and Bombay, it has been an extremely profitable and expanding business. But in order that capital might be forthcoming the leather industry must not have the ignominy now associated with it. A social revolution is necessary before such a state of things can be arrived at. A mere supply of capital will not suffice. Skilled workers having a practical training in the modern economical methods of tanning are necessary, who will manage the business on a large scale. The hereditary knowledge and skill of the muchis and chamars again must not be allowed to

[1] "Review of the Trade of India," J. E. O'Connor.

be wasted, but should be joined to improved methods of education. The tanneries should be started where there is a cheap supply of hides and raw materials for tanning, and also a colony of chamars and muchis. Recently, however, there seems to be some improvement in the leather industry. The exports for 1905–6 show a great improvement in tanned hides, amounting to an increase of 63·7 per cent. in quantity and 87 per cent. in value on the figures of 1904–5. Some new tanneries have been established, and they carry on a brisk business. The local market is also growing in importance, and this circumstance also manifests the possibilities of their development. In 1913–14 the export of hides and skins amounted to Rs.11·69 lakhs. An examination of the internal trade returns would show that the local manufactures in hides and leather were at least as valuable as the foreign trade. The total turnover (exports and consumption) would have been close on Rs.20 crores.

# CHAPTER XVI

## SOLA MANUFACTURE AND TINSEL INDUSTRY

THE demand for tinsel work is still very great, and the tinsel industry is fairly important and flourishing in villages. Images have for a long time been decorated with tinsel ornaments, and garments, turbans, caps, etc., are embroidered in gold and silver, as also horse and elephant trappings, canopies with fringes and palanquin covers. The industry in villages is the hereditary occupation of the *Malakars*, or the garland and pith (*Sola*) ornament-makers, and they carry on a brisk business at the time of the *Poojahs*, or the marriage season. When an image has to be decorated the *Shajwalah*, or decorator, informs the Malakar to supply him with the raw materials. The Malakar supplies *kap*, or pieces of *Sola*, to the decorators, who, in order to obtain an impression of the design, press the kap with the foot or elbow on a mould previously made by setting thick cotton thread on a kap with the paste. The paste is generally prepared with wax and scented resin. *Angtis*, or rings, are prepared by coiling lametta round an iron wire by means of a *Chorka*. A mesh-work of these is then laid on the surface of the kap, and the impression is thus obtained. The kap is then made over to

the women workers, who cut out some of the interstices by means of *Naruns.* These openings are then closed with *Jamira* or ruby or emerald foils from behind. The interspaces are pasted over with *Chumkis,* or spangles. These spangles are prepared in this way: Round a very thin iron rod a wire is coiled, and the coiled wire is cut into rings one by one. These rings are dropped on a highly polished anvil with the aid of forceps and hammered. With every stroke of the hammer a *Chumki* is made. For the preparation of the *Mukut,* or the crown, an iron wire frame is covered with lametta and set with *Chumkis,* and *Angtis,* the ends of which are tied together by means of *Resha* or twisted lametta. The Malakar also makes the *Topors,* or cone-shaped tinsel hats worn by bridegrooms and brides. Pith is attached to a bamboo reed frame and tinsel work then added to it to make the *Mours,* or crowns.

In the villages the Malakars are also found making children's toys, such as crude artificial flowers, fruits, dolls, monkeys, birds, etc., almost entirely made of Sola. Sola hats are also made and command good sale. The stems of the Sola pith plant are cut into lengths of two or three feet, only the thicker portions being selected, and tied into bundles. When they are quite dry, the brown bark is removed, and the pith is then cut up in various ways according to the necessities of the articles for which they are required. Thus, for the manufacture of hats, the stem is held in front of the artisan and with a long thin knife is stripped spirally, the knife being made to travel round and round within the thickness until the whole stem is

reduced to a very thin sheet. It has been pointed out that to perform this feat expeditiously requires great skill, since the slightest excess pressure will compress the pith and produce inequalities in thickness, and sever the sheet into useless pieces. Hats, etc., are worked up on wooden and clay moulds of the required size and shape, and if honestly made are built up layer upon layer of Sola sheets, pasted one on the top of the other. If the pith is required for the manufacture of flowers or to be woven into mats, the debarked stalks are drawn between bamboos fastened upright in the ground at various distances apart, or are flattened by means of smooth stones, a stone being firmly drawn over the top while the Sola rests on a smooth stone floor. By either of these methods the pith is compressed and drawn out. It will retain the form thus given until moistened, when it again expands. To make a flower the strips of Sola are compressed in such a manner that in transverse section they are more or less triangular in shape, and, along the surface corresponding to the base of the triangle, parallel lines are cut. The strips of Sola are then cut with a sharp knife transversely into very thin pieces. The pointed ends of the triangles are inserted into slits made on another stick of Sola, intended as the stalk of the flower. When the required parts have been thus inserted into their places, a brush moistened in water (previously coloured green) is made to touch the outer whorl of triangles. These instantly expand and become the sepals of the flower. A brush, moistened in pink or other coloured water, next touches the inner whorls, and these obeying the magician's wand expand into

petals, and are bent while still flaccid into the desired positions. The slits that were cut lengthwise along the compressed sticks of Sola are now seen to open out into petaloid teeth. Stamens are formed of thin strips of pith upon the extremities of which (from a coloured saccharine fluid) particles of sugar have been made to crystallize, thus forming glistening anthers. Floral buds are constructed of stained grains of rice fastened with green leaflets of sola. The simple artisans possess indeed a highly artistic and mechanical skill which has been praised by both Indian and foreign observers.[1]

The only tools that the Malakars possess are a low rude table, a pair of scissors, a small hammer, one or two reels and a pair of forceps. The women are also largely employed in the industry. In Kumartali and Mechuabazar, Calcutta, there are about ten shops with 125 workmen, besides 300 women helping them in the industry by doing indoor work. The workers are paid by piece-work; each man earns about 4 as. to 5 as. a day in the slack season, and 10 as. to 12 as. in the busy season. Almost all the women are members of middle-class Hindu families who devote their leisure hours to the work. There are also some poor women who depend on it for their livelihood, earning daily from 1½ as. to 2½ as.

In some places, wire work is carried on with great skill and dexterity. Huka pipes are adorned with *Kalabatoon*. Gold and silver wires, silk and cotton fabrics, are also woven with gold and silver threads. Benares brocades are by far the most

[1] *The Agricultural Ledger*, No. VI., 1902; also M. Roy's "Tinsel Work in Bengal."

famous. Some of the best embroidery is also wrought on a velvet ground or on English broad cloth. The heaviest kind is called *Kinkhab*. This is done by fixing the fabric which is to be embroidered on a frame-work. The patterns are lightly printed on the fabric with some kind of coloured material, and the embroiderer follows the patterns in laying the *Kalabatoon* thread. Sir George Watt has pointed out that the diversities and local characteristics of embroidery work are as numerous as the seats of the craft. There is hardly an important locality of production that does not show something in its gold embroidery that is as distinct as are its ruined tombs, mosques, and palaces, something that marks the individuality of its rulers, and of the dynasty of which perhaps it was the capital.

# CHAPTER XVII

## BANGLE MAKING

### (a) From Lac

Lac bangles are almost universally worn by our poor classes. Bangle making, therefore, is a very profitable village industry. Crude lac is purchased at 2 as. per seer. Refined lac, which is costly, selling at Re. 1 per seer, is used for making ornamental bangles. The instruments which are used in making bangles are (1) a wooden disc, called *pita*, on which lac is kneaded; (2) a small wooden handle used in the kneading process; (3) an instrument called *khapi*, by which the lac is flattened; (4) the *kalbock*, which measures the size and the circle of the bangle; (5) the *chanch*, or mould. The chanch is made for the bangle maker by the goldsmith. It costs him Rs. 2-4 for each pattern. Aniline dyes are used by the bangle maker, who mixes them with the lac in fixed proportions.

The profits of the bangle makers are very small. For this reason the industry is often in the hands of women. A bundle of twelve ordinary bangles is sold only for 2 as. When bangles are ornamental they are sold for 4 as. per bundle. The bangle makers seldom sell the bangle themselves. The middlemen purchase large quantities at wholesale

rates and intercept sometimes 50 per cent. of the profits of the industry.

### (*b*) From Conch Shell

Bangles are also made from conch shells, which are all imported. On their arrival the remains of the mollusc are extracted and sold to native physicians, who use them as medicine. The base of the lip and point of the shell are then knocked off with a hammer. From two to eight bangles are made from one shell. The bangles are of two kinds, (1) *kard*, or the whole-piece bangle, which is slipped over the knuckles; and (2) *khiten*, or the two-piece bangle, the pieces being held together by means of pins passed through the holes at the ends of the pieces.

The projecting joints and the crude portions of a roughly cut bangle are lopped off with an *adari*, or a hammer-shaped instrument with one side sharpened into an edge. Then the inner side is made smooth with a *salui*, or a rounded stick, which is made of sand and lac and which the artisan makes for himself. The upper surface being filed is then polished on a piece of stone (*sil*). On the polished surface fine lines are cut with a *kath*, which resembles a chopper except that it is bent, larger in size and narrower in breadth. The whole piece he divides into two with a *pattar*, or a knife, when a *khiten* is to be made. The artisan, when he files the surface and cuts fine lines on it, passes the bangle through a stick on which it hangs. The stick again is passed through a pole at the apex of the two prongs, the ends of which

are placed on the ground. This whole instrument is called *Tesna*, and on it the artisan rests his hands when he works. Some of these bangles he covers with a red viscous substance, which is a mixture of the vermilion and lac.

The artisan turns out two pairs of kard sankha or a pair and a half of khilan in a day. The kard and the *khiten* sell at 6 as. and 8 as. respectively.

Highly ornamental bangles are made in some places. Dacca in Bengal is famous for her bangle makers. There is a Sankhari bazar in Dacca, a very congested and dirty quarter, where the artisans both young and old labour to a late hour in the night, working at the semi-circular saw which ceaselessly runs up and down, and cuts the shell that is held by the toes. The bangle-makers are unusually industrious; but they do not improve their position. Their habits of life are filthy, and the shops in which they work and live afford but small accommodation for their growing families. The ornaments on the shell bangles there are often beautiful, and are of various kinds, being variously described, such as diamond cut wavy or Jaltaranga, fish or mach, shark-faced or makerchehara, bordered or karnishdar, etc.

In the ordinary shell the whorls turn from right to left, but when one is found with the whorls reversed, dakshina-varta, its price is extravagant, as it is believed to assure wealth and prosperity. One belonging to a Dacca Zemindar is so highly prized that he refused an offer of Rs.300.

# CHAPTER XVIII

## METAL WORK

### (*a*) The Industry of the Village Smith

The blacksmith, or the kamar, is another important village artisan. He makes the *phal*, or the iron tip, of the plough which is the most important of the agricultural implements. He also manufactures the *kodali*, the implement invariably used for digging the earth, as well as the grass-cutting implements, the *kastha*, the *harsua*, and the *khurpa*. For chopping straw for cattle, the *garasor*, and for cutting down trees, the *kurali* are also necessary for the cultivators. Not only is the blacksmith's work necessary for making the agricultural implements, the cooking utensils, the karai, hata and khunti, as well as the water vessels, the doles and the ghoras are also important in village economy. The blacksmith also makes many of the tools and other articles used in various handicrafts and professions. The tools of the barber, the carpenter, the mason and the tailor are all prepared by him. For building houses the nails, *paraks*, the hinges, *kabjas*, the bolts, *gazals*, and the door hinges are all manufactured in his shop. The shopkeeper who has to use scales for weighing also depends on the work of the smith. The women of the village also

depend upon the blacksmith for some articles of personal use. They all require for daily use the *kajal lata*, in which the pomade for blacking the eyes of their children is kept. Again, one of the bracelets which all Hindu women must wear should be made of iron, and is associated with all that a happy married life means.

One of the special branches of the blacksmith's trade is the manufacture of guns. In Bengal, Monghyr is its centre. There are thirteen gun-makers' shops in Monghyr, which produce 700–800 guns annually. The gun-making cottage industry has almost died in all places except in Monghyr, being superseded by the modern industry, iron and steel work carried on in large firms according to European methods, the Government factories at Cossipore and Ishapore. In a few villages, *e.g.* Kanchenagore (Burdwan), Senhat (Nuddea), etc., cutlery of an excellent quality is made, and commands a large sale. The manufacture of locks and keys is also a favourite occupation. Brass pieces are cast and polished and put together. Sometimes very strong padlocks and keys are manufactured by kamars of particular villages. The blacksmith in the village has to compete not only with the imported goods from Europe, but also with the products of the iron and steel workshops which are run in the country itself according to Western methods. There are fifteen important iron and steel engineering works in Bengal. Some of them compare favourably with all but the largest works in England. The E.I.R. workshop at Jamalpur employs 10,000 men, the value of the products per annum being Rs.54,000. Bengal is the only

province in India in which pig-iron is produced. The Bengal Iron and Steel Co.'s works, Barakar, produce pig-iron in blast furnaces of the most up-to-date pattern. Messrs. Burn & Co.'s works, Howrah, produce annually products to the value Rs.4,000,000. Agricultural implements such as kodalis, sickles, bill-hooks, etc., can be made economically and of better quality in factories than in the cottage system, and with increase of railway communication the distribution of factory-made articles of this class will be effected more and more cheaply, so that the scope of the village blacksmith will in time be reduced to repair work only.[1] The village blacksmith with his small capital and bad tools produces articles which are far inferior to those prepared in those factories run on the most modern methods. The price he charges is also higher, for he has to buy the raw iron in retail and in small amount, as he has to work only to order and is frequently without work. At present, however, there seems to be competition with imported articles. The price of the raw material is small compared with the price of the manufactured article, iron being bought at Rs.5 a maund and steel at Rs.13. But the finished article is sold from Re.1-4 to Rs.2-8 per seer. In the ordinary implements only a little steel is welded to the edge to give hardness and sharpness to it. The profits of this industry therefore seem to be greater than that of any other village industry. The ordinary blacksmith earns about Rs.15 a month during the working season. They are all independent of mahajans, and as their females can

[1] Watson's "Iron and Steel Work in Bengal."



HAMMERING A UTENSIL ON THE ANVIL (p. 233).

also earn for themselves if they like, they are really well off. As far as the manufacture of the village implements is concerned, it is difficult to suggest any improvements in the existing methods of production. The artisans themselves only complain about the high price of coal and coke.

The kamars work in all metals, including gold and silver, and despise the professional goldsmith, the subarnabanik or sonarbene. Most of the working goldsmiths, or Sekras, are kamars, and more than half the caste are employed as blacksmiths. The manufacture of the brass utensils also devolves upon the kamars.

### (*b*) BELL-METAL INDUSTRY

The bell-metal industry is one of the few village industries which have not suffered from the competition with imported machine-made articles. In spite of the extensive demand for enamelled ware, especially among the Muhammadan population, the industry still continues to thrive in its important centres. In Bengal, they are Kamarpara, Dainhat, Purbasthali (Burdwan), Khagra (Murshidabad), Ghatal, Kharar (Midnapore), Patna, Bankura, Santipur, Islampur, Malda, Rajbari, Kalam, Gomnati and Rungpur.

Throughout the Presidency the industry is chiefly carried on by Kansaris.

The *kansari* is a sub-caste of the *kamars*, which has severed its connection with the main caste, and set up as an independent group working in *kansa*, or bell-metal. They buy their material in the form of brass sheeting, and manufacture the *kansa*, which

is an inferior alloy of copper, zinc and tin. Bell-metal costs Rs.30 to Rs.40 per maund. At present no other alloy except *bharan*[1] seems to be made locally. Bell-metal utensils which were formerly made from kansa manufactured by the artisans in their own shops are now exclusively made by melting down the metal of the old kansa vessels. The artisans have told me that the risk involved in manufacturing good kansa in the shop far outweighs the possibility of profits, and that utensils made from old kansa generally have more polish than if they make the kansa themselves.

Of the two methods of the manufacture of bell-metal ware, (1) the *dhala*, or casting in moulds, and (2) the *pita*, or hammering, the latter is much more common. In Khagra, Murshidabad, which is one of the important centres of the bell-metal industry in the Province, there is only one family which follows the process of moulding, while there are more than fifty which have adopted the *pita* process, and that family again does not belong to the locality, but has come from Rajshahi. It uses an inferior alloy of copper and zinc, the vessels are not durable, and an artificial polish is used, as the utensils do not get the natural glaze of the kansa.

The preparation of the mould may be described thus: The outer mould, called the *dalee*, is made first in earth (mixed with cowdung, limestone, grain husks and jute cuttings) upon a standard

[1] A mahajan in the bell-metal trade repeated to me a saying which is quite popular among the artisans: all kansa are alike. Any mixture with *bharan* or an inferior alloy would break the kansa in the hammering process. Hence it is believed that the kansa made by the pita or hammering process is much more durable than kansa cast in moulds, as in the latter some alloy might be mixed.



THE FURNACE: THE ARTISAN POURING THE MOLTEN *KANSA* INTO THE EARTHEN CRUCIBLES.

vessel. It is divided vertically in two, and the two halves are joined again when the vessel is taken out. Then the *anten*, or the mould of the inner surface, is made by ramming earth inside the vessel. The moulds are then dried, the inner core receiving a scraping and fine polish. If a tumbler is to be manufactured, the *chaki*, or the mould of the rim, is fitted into the former and the whole turned upside down. There is space left between the outer mould and the inner core, as also the rim, for the casting. Into the rim now at the top, the muchi or the earthen vessel with the chips of old metals is fitted. To ensure that the muchi fits well with the moulds, these are provided with an earthen mouth called the *nali*. A hole is made on the surface of the rim, and the whole is placed in the fire. After three or four hours when the molten liquid has filled the hollow space, the moulds are taken out of the furnace, and the vessels allowed to cool and undergo the processes of chiselling and polishing. The *jali*, or the earthen net, is sometimes placed above the hole or the rim to skim off the flux.

In the hammering process the *muchis*, or the earthen crucibles, are larger. Being filled with the clips of old kansa, these are placed in the furnace. Two *jhapnas*, or semi-circular earthen discs, cover the surface. The *muchi* is placed in the furnace for several hours. It is then taken out, and the molten liquid comes out of the muchi through a hole made in it into the *anks*, or small earthen cups. Oil is placed on their bottom, and when the liquid has been poured, grain-husks are burnt on its surface. The burning of the carbon reduces the scum and prevents any free zinc from forming an

oxide. The scum is then skimmed off. This operation being rather difficult, is undertaken only by the master-artisan. The metal is allowed to cool, and then made to undergo four separate processes, one after another. (1) The pita, or the hammering process. The *nehais*, or anvils, are of various kinds. Some are hook-shaped and called *saboles*. With the help of their hammers, the artisans beat out the metals on the anvils to any shape they want. (2) The *ghasha*, or the filing process. The black colour on the surface of the vessels is removed by means of the file. (3) The *chancha*, or the scouring process. (4) The chiselling and the polishing process. The bottom of the vessel is fixed with resin to a cylindrical wooden hand-lathe, and this is made to revolve backwards and forwards by means of a rope. The labourer holds in his hands the double-ended rope, and the artisan applies the chisel to the revolving vessel. The *muhali*, or the chisel, is of various kinds. They are: (1) *shoman*, flat; (2) *tikelo*, oval; and (3) *chaku*, elongated. The first kind is used for the convex and the second for the concave surface. The chaku is used for chiselling the inside of tumblers. The vessel is rubbed with oil, hair, brickdust, lard and rag as it is chiselled, and gets a fine polish. The *khura*, or the rim, is made in this last process of chiselling.

The master artisan employs many apprentices. The wages of the boys vary from Rs.2 to Rs.8 per month. The boys are chiefly employed in filing the vessels, or in preparing the earth for the *muchis* and the *anks*. They cannot make the earthen crucibles themselves, these are prepared by the



HAND-LATHE FOR CHISELLING AND POLISHING: THE ARTISAN APPLYING THE CHISEL TO THE REVOLVING VESSEL.

master artisans. The apprentices belong to all castes. In one firm I found a Mussulman boy filing a cup. I also saw *kolhu*, *bagdi*, and *kaibartta* master artisans, so that it can be safely said that the industry is not confined to *kansaris*. The artisans told me that the demand for their goods had been increasing for some time, and so they had to recruit their workmen from all castes. The number of *kansari* families in Khagra and Berhampore at present is about sixty; there has been an increase of almost twenty-five in recent years. There are several mahajans in the localities where bell-metal wares are manufactured, who supply the artisans with the chips of old vessels from which to make kansa. These mahajans have their *byaparis*, or middlemen, in Cuttack, Dainhat, Kharar, and a few other places, who send them the old vessels. These are now charged at Re. 1–6 per seer. The artisans of Khagra prefer the old *kansa* of this place to the *kansa* of Cuttack or Dainhat. The *kansa* of Khagra, they say, gets a better polish. The mahajans pay wages (*banee*) to the master artisans at a rate determined per seer of the metal. The following is a fairly approximate wages list:—

BANEE PER SEER.

| | |
|---|---|
| 1. Tumbler . . . . | From Re. 1–9½ as. to Rs. 5–2 as. |
| 2. Cup . . . . . . | „ Re. 1–4 as. to Rs. 3–2 as. |
| 3. Cup with Sarposh . | „ Re. 1–13½ as. to Rs. 6–10 as. |
| 4. Thal . . . . . . | „ Re. 1–1 as. to Rs. 4–2 as. |
| 5. Dish . . . . . . | „ Re. 1–9½ as. to Rs. 5–2 as. |
| 6. Dish with nakas . | „ Re. 1–9½ as. to Rs. 5–10 as. |
| 7. Dibia, or betel-case | „ Rs. 2–9½ as. to Rs. 4–2 as. |

The artisans, however, in a few cases get their wages per piece without any reference to their

weights, *e.g.*, in the manufacture of tea-sets, receptacles for ghee, jhinuks, or spoons for children, etc. This is called the *ticca* system.

One of the mahajans told me that the banee has increased by 1 a. for every rupee during the last three years. Before this period, for twenty years, the rate of wages was almost constant. The mahajans and the artisans live on friendly terms. The mahajans understand how to sell the wares to the best advantage. They take the risk of buying and selling, and give out contracts to different artisans for making the goods on which they risk their capital. The artisans supply the mahajans with the wares in the stipulated time. Though the mahajans retain a large number of artisans, sometimes fifty or even more, on their books, they never play off one artisan against another. If bad times come the capitalist traders might be tempted to do so, but no pressure has as yet been exercised by them upon the artisans.

In their retail rates the mahajans take 2 as. to 4 as. per seer of the wares they sell. From wholesale dealers they take only 1 a. for Khagra, and 2 as. for Calcutta Kansaripara wares. The fluctuations in the price of the kansa metal effect only those wares which the mahajans get by giving banee to the artisans. Those which are manufactured according to the ticca system are not so affected.

The following improvements in the mechanical methods of the industry may be suggested: (1) Stamping from dies instead of hammering. The necessary machinery and hydraulic press, however, can be set up only in small factories, for individual

workmen cannot afford to buy the machinery costing not less than Rs.300; (2) The introduction of improved hand lathes for chiselling and polishing. In the latter now used, one coolie, pulling a double-ended rope, gives a reciprocating movement to the axle, and thus there is waste at every reverse pull. The hand lathe of the Madras pattern, by which one coolie can turn two lathes simultaneously, producing a continuous rotatory motion with the help of the crank-handle and a rope passing round the shaft of the lathe, is most useful and easily adaptable under the present conditions of the industry. The adoption of such a lathe will be quite inexpensive, and at the same time it will save much time and labour; (3) The introduction of punching machines to save the trouble of cutting with scissors; (4) The introduction of better and more permanent plate-moulds. A copper pattern may be used as a mould, made in two vertical halves, the pieces being kept together by four small friction clutches.

But more than any improvements in the mechanical processes, the industry needs advertisement. There is a large demand in bell-metal wares throughout Bengal. The middlemen cannot cope with the demand, and they charge prices which are often quite disproportionate to the wages they give to the artisans. The employment of agencies which will push on the sale of the wares will greatly stimulate the industry. Again, most of the wares manufactured by the artisans have become stereotyped, the handicraft being degraded to mere automatic work. The diffusion of technical and art-education, and the adoption of improved

artistic patterns and designs will give new life to the industry, in which art seems to be now almost extinct.

Tinsmith's work, like bell-metal manufacture, is also largely carried on in mufussil towns and villages. Lamps or *depias*, water-vessels or *mugs*, small boxes, etc., are prepared from old tins. These are chiefly the canisters which the tinsmiths buy from the people at a small price after the kerosene oil they contained has been used up. The tin-man uses a bellow, a bamboo pipe called *chong*, and also two iron sticks which serve as handles. He has his hammer, compass, pincer, and scraper. His solder is called *rang*. He uses cotton wool for melting the solder on a flat-tile.

### (*c*) Gold and Silver Work

Gold and silver work is found in most villages. The poorer classes wear brass, shell, lac, and glass ornaments. The brass ornaments, being very heavy, are painful to the wearers, but are worn because social distinctions require them. Gold and silver jewellery are made in all villages, and are worn chiefly by the richer classes.

Indeed, as means increase there is a steady progression from the plain silver bangle to the elaborate ornaments in the same metal; then to gold trinkets in endless variety, and eventually to precious stones, the process being inverted as hard times, or the expenses of social ceremonies, affect the financial condition of the family.[1] The people

[1] *Journal of Indian Arts and Industries*, Vol. IX.

invest all their savings in ornaments by melting the rupee into silver. The ornaments form a convenient reserve of easily realizable capital. When need arises, they are promptly melted down and sold. As it has been well said, "his wife is the poor man's bank."

The indigenous jewellery of the cottage is characterized by the purity of the gold and silver employed, the delicacy and minuteness of the workmanship, the taste and the skill displayed in the combination of coloured stones, and the aptitude for the imitation of any kind of original on the part of the workman. The ornaments consist of nose-rings, ear-pendants, armlets, necklaces, bracelets, bangles, anklets, etc. The anklets are never of gold, for gold is a sacred metal. The ornaments have usually long-sounding names, sometimes derived from flowers and plants. Gems are used. They are hardly ever facetted, but are rounded and polished. The result is that effects of colour are produced, rather than the hard and flashy effect associated with facetted stones. The designs are always elaborate and the technique magnificent, as the value of the material is great. This is a striking contrast to the European fashion. "The price of one glittering diamond necklace, such as European fashion admires, would often buy all the wrought gold or chains or rings worn by two or three members of some wealthy Indian family, though these jewels of less value are to be admired for beauty of design and workmanship." In recent years the deterioration of tastes has also affected the goldsmith's art, though this is the art which has suffered least of all. The women, who are

more conservative, still adhere to their traditional ornaments, and have not favoured European jewellery. In some of the towns, however, there has been imitation of the patterns that appear in the trade catalogues of Birmingham and Paris. Several firms in Calcutta which imitate European designs have become very popular, and the Indian goldsmith, artistically speaking, is completely ruined.

The value of the ornaments is regulated according to the quantity of gold and silver plus the workmanship of the Sekra (*the bani*). The bani varies from Re.1–8 to Rs.8 per bhari of gold. The middle classes generally give Rs.4–5 per bhari. Certain elaborate ornaments, however, are not charged per bharee, but according to the ticca system, a rate is charged on the whole as wages of the goldsmith and not per bharee. When old ornaments are sold there is on an average the loss of five per cent. of the value of the whole as well as that of the banee. The gold is also examined, and a deduction is made if the gold does not stand the test. For testing the quality of gold, the goldsmith relies mainly on the touchstone, a close-grained specially prepared stone on which the gold to be tested is rubbed. The quality is ascertained from the colour of the deposit it leaves. Pure gold leaves a reddish deposit, alloyed gold leaves white.

Gold is generally advanced by the customers, but the people who can afford to pay good prices order the wares from European firms in the chief cities. This discourages the workmen, who are thus compelled to depend on the poor and the middle classes for their subsistence. This is another cause of the decline of the art.



The goldsmith's tools consist of a few anvils and hammers, a perforated plate for wire drawing, a pair of scissors, pincers and tongs. He has also a crucible, and some moulds and discs for stamping patterns.

The methods of producing ordinary gold and silver wares are—

(1) *Repoussé* hammering, or *nakashi*. A thin sheet of gold or silver is fixed upon a bed of resin, brick-dust and mustard oil melted together. As this cools and hardens it holds the sheet in position, upon which a design had already been traced. A steel nail, called chheni, and a small hammer are now used in making depressions on the sheet as required according to the design. The sheet is next taken out and remounted inside out, showing the design in relief. The nail and hammer follow again, depressing the ground still more and bringing the design out more clearly in detail.

(2) Engraving, which is done by cutting into the surface of the metal with small triangular-pointed chisels according to designs.

(3) Die-stamping. There are steel and bell-metal dies of various patterns produced by engraving. Gold or silver sheets are placed upon these patterns, and on the top of the sheets a piece of lead. By gently hammering on the lead the gold or silver sheet below is pressed out of the engraved pattern. A plain back is now soldered on to the stamped sheet and the space between the front and back filled with shellac, giving the article a solidarity and enabling it to stand wear and tear. When the customer can afford to supply the metal in sufficient quantity for solid articles, simple hammering over the die is enough.

The stamped surface is afterwards variously ornamented, by *repoussé* hammering in the case of the thin sheets, or by engraving, and "diamond" cutting in the case of the gold. Gold wares are cleaned by dipping them in a solution of salt one part, alum one part, and saltpetre two parts, melting together over a fire. The articles are kept in the solution for a few minutes, and are washed with water and burnished with brass wire brushes. Silver things are cleaned by coating them with a thin paste of saltpetre and charcoal and then burning them over a fire. When the silver is not pure a little borax is added. Sometimes a red colour is given to the gold articles by the following process. A few pieces of raw tamarind are boiled in their shells over a slow fire. The shells are then removed and the pulp. A stock solution of common salt and alum is next taken and boiled in an earthen pot. The tamarind water is now added to this, the requisite strength being ascertained by actual tasting. A trace of fine sulphur paste is then added to the solution. After the solution has boiled for some time the gold articles are placed in it and stirred with a wooden stick. When the right colour is obtained the articles are removed and wiped dry.

## CHAPTER XIX

### BUILDING AND CARVING

ONE of the most important occupations vitally connected with our national life is the building industry. Though the masses of the people, the agriculturalists and the artisans of India, live in thatched huts with bamboo walls supported on bamboo posts, the construction of temples and mosques, or of domestic buildings for the richer people, the mahajans and the better class of artisans of the village, have created a steady and constant demand for the services of the masons and bricklayers. Temples and mosques have for a long time been built by kings, zamindars and rich merchants, or by the public, and are now found scattered all over the country. To antiquarians they are of interest as marking the sites of places which were important in the past. Thus in the Maldah district the remains, though miserable at present, led Mr. Fergusson to remark: "It is not, however, in the dimensions of its buildings, or the beauty of their details that the glory of Gaur resides; it is in the wonderful mass of ruins stretching along what was once the high bank of the Ganges, for nearly twenty miles from Maldah to Maddapore, mosques still in use, mixed with mounds covering ruins, tombs,

temples, tanks and towers, scattered without order over an immense distance and half-buried in luxuriance of vegetation which only this plot of India can exhibit."

The temples, mosques, and the domestic buildings are usually in brick. In the plains of Bengal stone is not available, and if required it has to be brought from long distances.[1] The bricks made from the stiff clay of the plain are fairly lasting, and far cheaper, and can further at a small cost be moulded into various neat carvings. Thus on the Bengal mosques and temples bricks have practically superseded stone as building material. Its effects have thus been pointed out: "The mosque became more and more long, with numerous domes and a profusion of curvings, but they could not be made high with correspondingly imposing openings. The domes were also low in height in the earliest mosques partly from the use of horizontal arches. The pillars were of stone; but even they, from scarcity of this material, had to be made sufficiently low. The pillars were usually of Rajmahal basalt. In some of the largest mosques of later times the

[1] "The geological conditions of Bengal constitute it as essentially a country of brick and terra-cotta buildings. Excluding the sub-Himalayan districts, the area where stone becomes the most convenient and plentiful building material is only about a fourth of the province, comprising roughly the divisions of Orissa and Chota Nagpur. In Orissa, under the flourishing native dynasties first established in the early centuries of the Christian era, a great style of stone-architecture and stone-carving has developed. In the ornamentation of the hundreds of temples, monasteries, and other works of stone which were built in the course of many centuries in the districts of Cuttack and Puri, the Orissa carvers acquired the most extraordinary technical skill in architecture decoration Hindu art has known" (E. B. Havell, "Monograph on Stone-carving in Bengal," p. 23).

walls were, up to a certain height, faced with stones."[1]

During the rule of the independent Sultans of Bengal a large number of works were constructed, which created a new style of Indo-Saracenic architecture—the Bengali style. This style by means of its massive remains often of excellent workmanship, its big vaults, wide corridors, numerous domes, profusely carved brick panels, and beautifully coloured glazed tiles deeply influenced contemporary architects.[2] Thus, as the "Ain Akbari" records, Agra, the royal residence of Akbar, contained more than 500 buildings of masonry after the beautiful design of Bengal and Guzrat, which masterly sculptors and cunning artists of forms have fashioned as architectural models. A part of Akbar's new palace in the Agra Fort, as has also been pointed out, was called specifically the Bengali Mahal, presumably because it was built after that style. This style influenced powerfully also the local masons, although they were Hindu, and Indo-Saracenic details were adopted wholesale in the Hindu temples. The adaptations from Musalman architecture are to be seen in the pointed arch of the temples with its outside cusps, the short heavy thick-banded arch pillars, simulating towers at the corner, the panelled carvings, and the frequency of rosettes and geometrical patterns in the carvings. Nor was the Hindu style of architecture without its influence upon Musalman architecture. This

[1] "Pre-Moghul Mosques of Bengal," by Manmohan Chackraverty, in *Journal of Asiatic Society of Bengal*, Vol. VI., No. 1.

[2] "Bengali Temples and their Characteristics," Vol. V., No. 5, *Journal of Asiatic Society of Bengal.*

is quite natural as the first Musalman Governors of Bengal had to depend almost entirely on Hindu artisans for the construction of their mosques, and for materials they often utilized the fragments of Hindu temples they had demolished. Thus there was a curious superposition of Hindu details on general Saracenic plans. The carvings on the pillars, on the front wall, and round the prayer niches are more or less copies of Hindu ornamentations, the tessellated garlands, and the geometrical inter-twinings being specially noticeable. The arches spring direct from the pillars, without any pendents, thus differing from Saracenic examples. The domes are also built up of concentric rings of bricks, one ring above the other, each becoming smaller and smaller in circumference, until the top opening is closed by stone, just as in Hindu towers, built on horizontal arches. Early in the fifteenth century the Hindu revival began with the seizure of the throne of Bengal by Ganesh. The revivified spiritual earnestness of the people of Bengal, specially among the followers of the *Sakti* cult, and the disciples of Chaitannya Dev found an expression in the building of the innumerable temples that adorned almost every village of Bengal. Thus the local architecture was greatly influenced by the religious revival, and its effect is traceable even in the Musalman edifices. Thus the Eklakhi Tomb of Hazrat Pandua shows the curved roof of the Bengali hut and the curved brick tiles. Similar curved tiles and curved roofs became the peculiar characteristics of the later Musalman buildings in Bengal, *e.g.* the Kutabsahi or Golden Mosque of Pandua (990 H.), Kadam Rasul Mosque in Gaur

(937 H.). The way was thus paved for the present Hindu style in Bengal, which, receiving a great impetus from the religious ferment, spread ultimately from the edifices of Radha Krishna faith to those of the Saiva and Sakta faiths.

The Bengali temples stand on a raised platform wide and fairly high. The body of the temple consists of the sanctum, which is oblong and sometimes cubical, generally with various additions. The sanctum has, as a rule, a covered verandah in front, which has usually three arched openings between two pillars. The arches are pointed, cusped outside, and generally 16-cusped. The pillars from which the arches spring are short, thick, heavy-looking, square above and below, with two or more thick bands round the central shaft. The architrave is marked out from the upper part of the front by a series of curved lines, and the arched portion is similarly distinguished from the sides of the front. These side portions end in well-defined corners whose horizontal bands and vertical lines or panels simulate the appearance of buttressing towers. In the older brick temples the spaces between the arches, between the curved lines and the roof-base, and on the sides are covered with curvings. The curvings are mostly on brick-panels: and in the recent ones in lime and plaster. Panels of processions line the base, panels crowded with soldiers, horsemen, and elephant riders. Above them appear square or rectangular panels depicting in Vaishnava temples Radha-Krishna, or exploits of Vishnu, and in Saiva or Sakta temples the exploits of Shiva or Kali and Durga. There are also mixed panels of rosettes or geometrical

patterns; and in some instances miniature temples are piled one above the other along the arched openings. Besides the verandah, the inner sanctum is often covered in front with curved panels, which are, however, simpler, and less varied.

There is a great variety in the roofs of these temples. In fact, the diversity is observed with such large differences that the latter serve to classify the various temples. They have been divided into (*a*) The hut-roofed, the roof modelled after the ordinary chauchala hut.[1] It has coverings on four sides, which are more or less curved, in some domical, in others flatter, but never straight and periodical, and secondly, the coverings have eaves drawn out lower down to a point at each corner, thus making the roof-base curved like a segment of the arch. In the ordinary Bengali huts the flexible bamboo eaves are drawn out to permit the rapid draining of the rains so heavy in lower Bengal. The simplest variety of the hut-roofed temple is more or less domical, ending in a spire only. Further development is marked by the substitution of a spired tower, or of a spired duplicate

[1] Curved roofs, as Fergusson observed, while very rare in the rest of the world, are common in India. We have not only the *dome* of the *stupa*, but the barrel roof of the chaitya hall or church, the Bengal cornice and the curvilinear steeple of the Indo-Aryan or Aryabharta style of temple. Every form of curved roof in India can, I venture to think, be explained by assuming its derivation from a prototype constructed with elastic bamboos. The late Mr. William Simpson, who successfully applied this explanation to the Bengal cornice, the barrel roof of the chaitya hall and the Indo-Aryan steeple, truly remarked that the claims of bamboo to supply a theory of origins for Indian architecture had been insufficiently considered, but did not proceed to apply his theory to the case of stupa (W. Simpson, "Origin and Mutation in Indian and Eastern Architecture." Quoted in V. Smith's "History of Fine Arts in India and Ceylon," ch. xii.).

on the roof. Single towers gradually develop into multi-towers, five towers or *Pancha-Ratna*, nine towers or *Naba-Ratna*. There are also some seventeen or twenty-five towered varieties. The majority of the Bengali temples, however, belong to the variety capped with a duplicate. This top structure is only a repetition of the main hut-roofed style, with one, three, or five spires. Though begun later this type has now superseded all the other varieties, and includes several famous temples, *e.g.* the temple of Kali Ghat, Sita Ram Ray's temple of Dasaabhuja in Muhummadabad, Jessore, the temple of Syamchand, Santipore, the temple of Baidyanathpore, Kalna, the temple of Tarakeswara. In the duplicated variety, the temples, instead of the structures above the roof, are sometimes multiplied, increased to 12 or to 108. (*b*) The bungalow roofed, where the roof is adopted from bungalows, cottages with roofs having two sloping sides ending on a ridge. In the existing temples the triangular roofs are doubled, and the buildings are called *jor-bangala*. A hut-roofed structure is sometimes added on to the top. Several *jor-bangalas*, again, are grouped together, *e.g.* Rani Bhavani's temples at Baranagar, Murshidabad.[1]

No large temple has been built since the beginning of the last century. The temples that are built now are generally very small and have usually the hut-roof with simple spire. Some are more or less conical, ending in spires, or have elongated

[1] The above account is derived mostly from the articles "Pre-Moghul Mosques of Bengal," "Bengali Temples and their Characteristics," by Mr. Monmohan Chakraverty, *Journal of Asiatic Society of Bengal*, Vol. VI., Nos. 1 and 5.

four-sided roofs with the eaves well drawn out, others again have pyramidal roofs with one spire. The hut-roof type with one duplicate on the roof, which had been very popular in the seventeenth and eighteenth centuries, has now ceased to exist. The *jor-bangla* type is also dead. Thus what had been a living art for centuries in the past, exercising its influence on Saracenic architecture, is almost extinct in our time, and the few temples that are built now are so many evidences in degeneracy in style and workmanship. Temples are now being built with a straight roof and having no arched verandah or even a plinth, with none of the grandeur and solemnity associated with the Bengali style of temple architecture.[1]

The old domestic buildings that are scattered all over the country, especially in the districts which are of historic importance, are clumsy in construction. The doors, windows, as well as the verandahs and corridors, were too small, the lighting and ventilation being left almost to chance. There is a story current in the district of Burdwan—and it is testified to be true—that a man of Herculean strength and body, when he was married could not enter his father-in-law's house at all, and had to remain in the garden in front for the night. The windows were made small not to allow the women to be seen from outside, while the construction of small doors is said to be intended to throw obstacles in the way of thieves running away from the house! The stairs were high and steep, and there are very small

[1] "A cubical body with arched verandahs, above which rises a curvilinear roof, drawn down at the ends like a Bengali thatch of bamboo" (*Hooghly District Gazetteer*, p. 41).

and dark but strong rooms called *chore kuturis*, where valuables were kept.

Every house had a quadrangle in the middle, where the members of the joint family could meet and discuss questions of common interest, and where guests and castemen could assemble on the occasion of social ceremonies like sraddha and marriage, in which a large number of men has to come to the house and is fed by the family. The inner and the outer apartments are separated from one another, and between them is the *chandimandap*, where members of the whole family, male or female, would assemble to worship. In the houses of the rich large amounts of money were often lavished in the construction of the *chandimandaps*.[1] The bamboo was cut and smoothed with an incredible amount of diligence, and beams made of palmyra wood were prepared with equal care. Talc was first laid on the whole roof, over it was spread a layer of the plumage of the so-called Indian jay (nilkantha), and finally the thatch was put on. Since the introduction of masonry work in the country, the construction of the best description of *chandimandaps* has fallen into disuse, and in a very short time will be altogether a thing of the past. Two good specimens are still known to exist, one at Ula, in Nadiya, the other at Atpur, Hughli. Architectural ornaments, generally consisting of conventional lotuses, geometrical drawings, as well as figures of soldiers, birds, and animals, were executed on the mud walls

[1] Formerly the architectural paintings were executed by common *rajmistris* in the mud walls of the chandimandaps, which probably represent the only indigenous architectural work of Bengal proper, for masonry work was very scarce in the country last century.

of the *chandimandaps*, as well as in the halls or *dalans* of the houses of the kings, the court officials, and of the rich merchants who made their fortunes in the capital cities, the descriptions of which had been handed down to us by such national epics like the *Kabikankan* or the *Monosharbhashan*. The most common was the *Chockmilan* house, one with a square yard in the middle, enclosed on three sides by the building and its verandah, and one side by the *chandimandap*. The walls of the enclosure were ornamented with beautiful pilasters and *nimbs*, or covered with figures and other carvings of luxuriant variety.[1] Good arches were constructed, and there were excellent carvings made even in domestic buildings. In all the old towns in domestic architecture the wood carving is seen on verandahs and balconies, which often sets off very much the front of the larger houses, and relieves the monotony of plain-faced streets. There are projecting balconies which are very elegant in shape and fashion of details, while the interior courts also show great artistic and mechanical skill. It has been observed

[1] "In the Kantanagar temple, near Dinajpur, the ornaments consist of an infinite variety of terra-cotta reliefs, some of a purely decorative character, some treating mythological subjects in the usual conventional style, but most representing the ordinary pursuits and amusements of the people of Bengal at the beginning of the last century. Scenes of agriculture and sports, processions of horses and elephants, men playing musical instruments, tapping date palms for their sap, carrying burdens of bamboos balanced on their shoulders, smoking hookahs, gambling, marrying, feasting, worshipping, and meditating —the whole panorama of Eastern life. Roughly executed as most of these small terra-cotta panels may be, we find in them a sense of life and movement utterly wanting in later productions of a more finished type. It has been suggested that if Indian art had addressed itself to the serious study of living form it might have produced something entitled to rank higher than the most varied series of ornamented designs" (*J. R. I. A.*).

that wherever one comes upon a row or blocks of flat-sided, straight-lined buildings of one monotonous, unmeaning pattern, there he has the mark of a foreign administration. Indeed, the Indian architects attained to a very high degree of excellence, and the art continued to thrive till recent times. Mr. Fergusson, the author of the classical "History of Architecture," remarked: "Architecture in India is a still living art, practised on the principles which caused its wonderful development in Europe in the twelfth and thirteenth centuries, and there alone the student of architecture has chance of seeing the real principles of the art in action." He observed that if only Indians could be made to take a pride in their own art, Indian builders were quite capable of equalling or surpassing the great works of their forefathers. But the public taste has been vitiated, and houses in European styles have become fashionable. The Public Works Department has ignored the living traditions of Indian building, though "it is one of the first principles of architectural practice that the designer should make use of any tradition of construction or design." The artisan thus loses his prestige and occupation, and seeks employment in the Public Works Departments. Its effects are twofold. The artisan has no power of initiative, and having simply to copy the foreign patterns begins to forget the traditional methods. There being no demand for the work he cannot go elsewhere, and so he becomes a slave of the Public Works contractor. Good and artistic work takes time, but the contractor tries his best to finish the job and to get his profits as soon as possible. Again, artistic work can be done only with the best

materials, but the contractor gives the artisan the worst materials he dares to use under the supervision of the Public Works subordinate. Indeed the Public Works contract system is totally unsuited for artistic achievements in architecture, and the sooner it is abandoned the better for the Indian architecture.

It has sometimes been said that the Indian style of architecture cannot be adapted to modern utilitarian needs. This is, however, the dictate of a dull and utilitarian policy characterized by a philistine indifference to the originality and genius of the Indian craftsmen. Architecture is still a living art in India. Throughout the villages of India there are still a large number of master-builders whose ancestors "built like giants and finished like jewellers," and who are still maintaining the proud traditions of the noble art[1] in the temples and mosques that are now reared. If this native genius is utilized and directed by European experts, the Indian building style will not only be revived but is sure to be improved and adapted to the utilitarian needs of modern life. If the Indian builders have been allowed opportunities to deal with modern methods of construction, they will be able to adapt their traditional methods to modern architectural practice. It is unfortunate, however, that they are not thus employed and encouraged by the Government. As Mr. E. B. Havell has remarked, "The Public Works Department, by its

[1] Of these artisans Mr. Fergusson wrote thus: "One was in course of construction when I was there in 1839, and from its architect I learned more of the secrets of art as practised in the Middle Ages than I have learned from all the books I have since read" ("History of Indian and Eastern Architecture," p. 475).

boycott of the Indian artisans and of their art, has prevented them from learning much of modern European constructional methods, but on the other hand, the departmental buildings are no more free from constructional faults than they are satisfactory from the purely æsthetic standpoint. They might be improved as much in construction and technique as in design by a more general employment of the simple but sound building tradition of India." Again, the official neglect of Indian style has led to the general prevalence of the idea that it is a mark of enlightenment to prefer European methods. Thus the public learn to believe that the Indian style is dead, or useless for modern life. This neglect of architecture[1] is also responsible, to some extent, for the decay of the Indian art industries, for "the building industry embraces nearly all the most important handicrafts of India, and, as in every country, its condition is an index of economic progress and of every kind of artistic development; for not only does it fulfil manifold purposes of practical utility, but in its full development it brings into play man's highest creative abilities."[2]

[1] In the Native States, however, the artistic traditions of the builders are still valued, and Mr. Alfred Chatterton, speaking of the Art Industries of Mysore, said: "There is not the slightest doubt that the determination of those responsible for the building of the New Palace at Mysore to have the work carried out by the craftsmen of the State, has done much to place the Art Industries of Mysore on a new footing and give them a new lease of life. There is much truth in the contention which has been put forward that the decadence of Indian Art Industries is due to the neglect of Indian architecture and to the adoption of purely utilitarian ideas in regard to both public and private buildings, since the former were placed under the Public Works Department" (*The Hindu*, September, 1910).

[2] The transfer of the seat of government from Calcutta to Delhi led to a discussion about the revival of Indian architecture and of the

It is, however, not the mere employment of the Indian builders, but the encouragement of their art by the Public Works Department,[1] that will lead to the revival and development of our native architecture. At present a large number of our artisans are employed in the construction of Public Works buildings, but, as has been pointed out before, they simply obey orders and are not allowed to follow their own methods of construction. Considering that the Public Works Department is the best employer and most punctual paymaster, and represents in the eyes of the mistry the official will, it is expected that the mistry when left to himself will produce mere copies of its styles and designs. Thus the bungalow form of building is gradually coming into use in the country among the rich and the middle class. The plan is as simple and square as possible, and mainly consists of four thick mud-brick walls pierced by the necessary doors, surrounded by a verandah carried on pillars, while the whole is surmounted by a bent roof of thatch. This comfortable but hideous structure is the type

lesser branches of art in the English Press. Mr. Havell issued an eloquent appeal in the London *Times*, and wrote a paper on "Indian Builders and Public Works Architecture for the Industrial Conference, 1912." The *Daily Telegraph* (London), December 23, 1911, also wrote an editorial recommending to the Government a new architectural policy: "A wide field presents itself for a revival of Indian Art in many directions, and though the creation of a new capital at Delhi makes architecture the first consideration, it is earnestly to be hoped that a golden opportunity will be seized for improving many other crafts closely connected with the prosperity of the people."

[1] Mr. E. B. Havell recommends that municipalities should be encouraged to make a beginning in this direction in giving the Indian artisans employment in local undertakings now generally entrusted to the district engineer or to a public works subordinate, who in architectural matters is entirely an amateur.

of Anglo-Indian domestic architecture. We may concede without hesitation that a more ugly building could not easily be made. But it answers all the purposes for which it is intended, giving sufficient accommodation and due ventilation. The necessity in India for free currents of air dictates a long building, one room only in width, facing to the right quarter. It is raised from the ground: the walls are thick and the roof is sun-proof. European details are introduced in all buildings. The corrugated iron roof, the iron bars of the balcony, the English windows, the classic ornament over the lower windows, the door with its upper part iron barred, the sham quoins at the corners of the walls, all indicate European influence, while the mere alignment of the buildings into rectangular lines and blocks lends an European air to the buildings. Indigenous traditions, however, like the varied geometric trellis work and the wood-carving of the balcony verandah, or the richly carved doorway and niches between the windows still survive in these buildings. The indigenous traditions of the craft are still strong, and in spite of the introduction of European details the mistry remains intrinsically oriental in his notions. A writer in the *Journal of the Society of Indian Arts and Industries* remarks: "I think I am justified in contending that the strongly conservative texture of the native mind is more efficacious than is generally allowed against the wholesale adoption of European designs. The academic traditions that rule our Western studies of architecture leads us to attach great importance to purity of style. No such theories trouble the humble builders, whose work I have described as

showing the present tendencies of Indian architecture under the strongest stress of the circumstances that we consider most adverse to its natural development; and in spite of some incongruities I venture to think that the indigenous forms endeared to the people by centuries of tradition will not be lightly set aside."

Near the towns where the artisans can get employment throughout the year, there is almost a whole village inhabited by these artisans. They are generally classified into three distinct grades: (1) The *Raj* or the mason, the bricklayer and the plasterer. (2) The *Majur* or the ordinary labourer, who is engaged in digging earth for the foundation, in preparing the mortar, *i.e.* mixing the constituents in proportions fixed by the masons, and in wetting the bricks. (3) The *Reja*, generally a woman, a boy or a girl, whose work is simply to carry the mortar and bricks to the masons. The work of the *Reja* involves less muscular strength than that of the *Majur*, and sometimes weak and sick men are also employed to do the women's work. The mistry is the employer of labour, the Captain of the Building Industry (mistry, lit. head), who supervises over the work of the *Raj*, the *Majur* and the *Reja*. The building industry is the only occupation in our rural tracts in which women are employed in outdoor work on a large scale. These *Rejas* generally come from lowest grades of the Hindu society, being Doshads, Chekuiyas and Bagdis. These women maintain themselves from the wages they earn as *Rejas*, sometimes supplementing their earnings by such indoor work as grinding bricks into Surki, or

limestone into lime, etc. The wages of the *Reja* are generally three annas, while those of the *Majurs* four annas, and of the *Raj* six annas throughout the year in Bengal. They work from 9 a.m. to 5 p.m. The boys who work with the women as *Rejas* become *Majurs* when they grow old. Occasionally, especially when they are sons of mistrys, they also rise to the occupation of the *Raj*. But only a very clever and experienced *Raj* can hope to be the head mistry of the business. He is a natural leader among his men, possessing not only technical skill but also shrewd business knowledge and the faculties of an organizer. He gets the capital of the industry from the owner of the building, and is held responsible by him for the work. He employs the labourers, and is their paymaster, daily distributing the wages from the money supplied to him by the house-owner. He gets a monthly salary, varying from Rs.15 to Rs.20, or sometimes daily wages, generally double those of the ordinary *Raj* for his work of supervision, general management and control. Sometimes he works according to the contract system, undertaking to finish a building within a fixed time. The building owner supplies the building materials while the mistry pays the daily wages to his labourers. When the building is finished the mistry gets either a lump sum, fixed beforehand, or an amount calculated from the cubic feet of masonry work constructed. What he is able to keep for himself after paying the wages of his labourers constitutes his profit. The mistry seldom works personally. His services are in requisition when a difficult arch is to be constructed, or fine

chiselling and carving are to be made, or the foundation of the building is to be laid; generally his time is spent in supervision.

In many villages there are families of stone-cutters and stone-carvers who make the ordinary cups and bowls required by villagers. But the industry has been specialized, and is found in its higher developments in the important places of religious pilgrimage where there is a steady and constant occupation of these artisans for the construction and repair of idols and temples. In the districts of Puri and Cuttack, there are a few families of stone-carvers who have found employment lately in the building or restoration of the temples. Their work is considered to be hardly inferior in artistic perception and technical skill to that of their predecessors. Some of these artisans were employed in restoring the ancient carvings of Kanarak and elsewhere and Mr. Marshall remarked: "The work of the modern stone-mason, a native of Bhubaneswar, does not fall much behind the old work, except that modern restorations of human and animal figures are less graceful than the older models." Fifteen or twenty years ago there was a steady demand for architectural carving. The artisans were required to carve stone doors or columns supporting the verandahs of private houses. Mr. E. B. Havell made the following observations on the carving in the doorways of Emar Math, a Vaishnavite monastery in Puri: "The delicate surface carving in low relief is admirably contrasted with the bold cutting of the pilasters supporting the projecting cornice over the doorway. It is altogether a fine piece of work,

worthy of the best traditions of Orissa architecture." The demand for architectural carving, or for finished sculpture has almost ceased, and the artisans are now employed in making small soap-stone carving by the sale of which they now earn a living. The soap-stone carvings are generally coloured black to make them resemble the more expensive work in handstone. Figures of the trio, Jagannath, Balaram, and Suvadra, as well as of Ganesh, Vishnu, group of Krishna, and the Gopis, are carved, and are largely sold at the time of the festivals of Juggannath. Some of these are full of life, and show a composition and a combination of gradations of relief that are admirable. But the artistic skill and dexterity of the artisans are worthy of much better work. "It is deplorable," as Mr. Havell has observed, "that the standard of public taste in Bengal should have fallen so low that skilled artists of this stamp have no employment for their best talent; whilst the lowest class of commercial Italian Statuary, incomparably inferior to the art which these men can produce, is in regular demand at prices which would make all the sculptors in Orissa rich beyond their wildest dreams."

Besides stone-carving proper, there is a good deal of architectural work carried on in Orissa in a kind of conglomerate stone, too coarse-grained for fine carving, in which the ornamental details are roughly blocked out by the chisel, and afterwards finished by a layer of fine stucco or chunam. This process of applying fine plaster to stonework is very ancient, and is used for figure sculpture as well as for ornamental details. The chunam often

serves as a ground for fresco-painting. Finely designed pedestals or altars for the tulási plant are also executed by this process. It is quite a distinct art to stone carving, and is not practised by ordinary stone-masons. For a damp climate, like that of Bengal, this plaster work has the practical advantage of preventing moisture from penetrating through bricks and porous kind of stone.

Stone utensils like trays, cups, bowls, etc., are made in many villages. These vary in price from two pice to 4 as., and are sold chiefly by retail dealers, or by the artisans themselves, at the time of meals. Small idols are also made which vary in prices from as. 4 to Rs. 5 each.

# BOOK III

## *CREDIT AND TRADE SYSTEMS*

# CHAPTER I

## THE ORGANIZATION OF RURAL CREDIT

THROUGHOUT the country the indebtedness of our agricultural population has now come to be very serious. It has been estimated that very nearly 75 per cent. of the agriculturists of our country are in debt. This figure seems to be not at all exaggerated, and should be accepted as long as no thoroughly statistical inquiries in this direction are made. The mahajan, however, though ubiquitous, is not so base and inhuman or a veritable vampire of the people as many think him to be. Without his aid, our agricultural operations would be at a standstill. Again, our people are so poor that they depend on him not only for cultivation but also for the very necessaries of life. Thus the mahajan has to furnish money to the cultivators before harvests, and forgoing the repayment of loans he feeds his debtors in the bargain between the harvests in order to keep alive the hope of being paid in future. The money-lender is called by the ryot, the *jater* and *pater mahajan*, the guardian of his honour, and the supplier of his food. He supplies the cultivator not only with food at the time of need, but also with *hat* expenses every week, with capital for buying stock, and with cash for providing himself and his family with

clothes, without which they would fast be reduced to needy paupers. For all this, the mahajan and his debtor usually live in friendly terms. Bonds are executed by the *mahajan* only when the ryot's faith is questionable. He also sees that the affairs of his debtor gradually improve. If he finds him going down, he makes a further advance in order to enable him to cultivate a more profitable crop, like mulberry or sugar-cane, and helps him to improve his condition. The mahajan further befriends him in all zemindary and law suits. Thus the ryot regards the mahajan with reverence. Whenever he comes to his house, he brings for him the first fruits, good fish or milk. The cordial relations between them continue while faith is kept by the ryot, and he does not resort to another mahajan.

There are usually two kinds of loans in villages :—

(*a*) *Grain Loans.*—In Bengal, the cultivator usually takes paddy from mahajans or zemindars, for the purpose of sowing, or for food, and repays the debt at the *aush* harvest in *bhadra*, or at the *aman* harvest in *magh*, usually the same amount of paddy, with half as much again, is paid back by the end of the bhadra if it was lent in *baisak*, *i.e.* the interest is 30 per cent. This is called *derhi*. Sometimes the interest is 25 per cent., the system being called *Sawai*, and also 30 and 35 (six or seven seers are given as interest, when half a maund of paddy is borrowed). Often the cultivator is compelled to borrow paddy on the condition of repaying twice the amount (100 per cent. interest). This is called *dwigoon* by the ryots.

There is a well-known proverb, *Bhojer derhe, bijer dwigoon*, which signifies that the rate of interest is 50 and 100 respectively, when grain is borrowed for food, or for sowing purposes. The reasons for the high rate in case of loans for seed are (1) seed grain is of good quality; (2) prices of seed time are much higher than harvest prices; (3) the amount that is spent is small; (4) the loan is used for productive purposes.

Sometimes the grain is lent, and at harvest time an equivalent to the real money value of the grain at the time of borrowing is returned (*asalke asal*). Thus one rupee's worth of grain is borrowed, and after six months one rupee and two annas' worth of grain is returned.

(*b*) *Money Loans.*—When money is lent to cultivators the repayment may be in money or in produce; the latter is largely if not generally the case when the mahajans are brokers as well as lenders. The vast export trades are chiefly carried on by advances made by middlemen with a view to securing the crop. This system is called *dadan*, and it always prevails in the tracts of special produce. Money is lent on condition of its being repaid in the produce at so many seers per rupee, whatever may be the current rate at the time. Thus Rs.5 to Rs.5–8as. are advanced to the jute cultivator in *ashar* at the time of sowing, and he repays the debt in *aswin* in a maund of jute. Sometimes the terms are modified thus: the cultivator borrows Rs.2, and pays back during the harvest time Rs.2 worth of jute and 5 seers more as interest. In the case of grain and oil-seeds Re.1 to Re.1–4, and Rs.2–8 to Rs.3 are usually

advanced in *paus* or *magh*, and one maund of grain and oil-seeds are repaid in *chait*.

The village *mahajans* and *paikars* employed by Indian or European exporting firms, or owners of silk factories, jute, flour, or oil mills, etc., lend money in this way. In the silk trade, for example, the silk-filature owners advance a lump sum to the paikar for purchasing a specified amount of the cocoons. The paikar distributes portions of the money he has got by way of advance (from Indian or European filatures) among the cocoon-rearers, either for expenses of growing mulberry or for purchasing leaves to feed the worms. The cocoon-rearers cannot carry the produce to distant hats, and usually they take advances from the *paikars*. Thus they have to sell the cocoons to these paikars, who also deduct from the price a commission for undertaking the sale. Frequently, again, especially in the case of such exports as rice, wheat, jute, tobacco and oilseeds, the *paikar* does not go from cottage to cottage, but offers *dadans* through an *arat-dar* or owner of a warehouse. The latter gets a commission as the purchases are made through him, and is responsible for the loss of money which the *paikar* or *gumastha* has advanced to a defaulting cultivator through him. This responsibility is called by the technical name jhonk by the merchants. In the case of the cane-growers, the *mahajan* usually lends money on condition of getting it back in seers of *gur*. The *mahajan* in this case is usually the sugar-refiner, who finds it to his advantage to lend money to cane-growers. He thus becomes certain of a regular supply of *gur* from his creditors during the season, while getting

rates of interest for his money. The *gur* is usually charged at rates when it just comes into the market early in the season. The cultivators have to give up the *gur* before the Phalguni purnima day. If they do not the mahajan will either go to court, or charge a higher rate of interest, and deduct the gur at lower prices from his loan.

Money is lent: (1) By oral contract without security, generally by one ryot to another. Small sums not exceeding Rs.10 are lent on interest at 1 anna, 2 annas, or even 4 annas in the rupee per mensem, payable in advance. No written bond is usually given in such cases (roka). In the big towns such petty artisans as cobblers get small loans (not on bonds) from one of their rich castemen at a very high rate of interest, paying back capital and interest daily after a whole day's work. In vegetable markets, there are some greengrocers who daily get loans from a comparatively rich shopkeeper, and after selling the vegetables pay the loan back with an interest usually of one or two pice. (2) By unstamped *chit* generally by ryots. (3) By simple bond with or without security.[1] The rate of interest charged is written on the bond, and it varies from Re.1 to Rs.3–2 per cent. per mensem, *i.e.* from Rs.12 to Rs.37–8 per annum. At every renewal of the bond, the unpaid accumulated interest is added to the capital. Again, the interest is often deducted in advance to the advantage of the lender, or a premium is added, while the debt is repayable by instalments, usually

[1] Sometimes a third person enters into an agreement at the foot of the bond accepting the borrower's liability as his own, should he fail to pay. This is called *jamin tamasook.*

monthly over ten months, no counter-interest being allowed. Sometimes the bonds contain penal clauses stipulating for additional and heavy rates of interest (*kisti khelapi sud*) in case of default. Other conditions which are stated in the bond are: (*a*) The land be not alienated as long as the debtor does not pay off his debts; (*b*) The time for repayment in several *kists* is limited to two or three years. (4) By entry in the moneylender's *bahi*, *dusthabey*, or account book. Loans on the *bahi* are kept up as a regularly running account made up and balanced from time to time. The books which are usually kept by village mahajans are: (*a*) The day-book or *rojnamcha*. The left hand or credit side of the page is known as *jama*, and the right or debit side as *nam*. (*b*) The *rokar-bahi*, which is exactly the same as the former with this difference, that it is balanced after each transaction. (*c*) The *lekha bahi*, which is the ledger, and is made up as time allows from the *rojnamcha bahi*. It contains each debtor's account separately with a reference to the page of the day-book on which each item has been entered day by day. (*d*) The *jama kharach*, which is an abstract of the day-book, and is hence also called *khatiyan*. It shows the totals of receipts and payments on each page. *Gayal khata* is the head under which bad debts are written off.

There are two special classes of money-lending by *bahi* in the North-west called *Augahi* and *Rozahi*. *Augahi* is lending of money to be repaid with interest at 20 per cent. in monthly instalments. *Rozahi* is money lent to be realized in daily instalments with interest at 25 per cent.

The *Augahi Bahi* is ruled like a chess board

with twelve columns. As each month's instalment of Re. 1 is realized it is entered in a square until the twelve squares are filled. There is also a separate *bahi* in which the principal is noted when lent. It may, however, be noted in the margin of this check-pattern book.

(5) *Pawn-broking.*—The cultivator also borrows by giving up his wife's ornaments as *bandak* or pawn. The pawn-broker usually gives only Rs. 3 5 as. of the value of the pawned goods. The charge of interest is either 10 as. or 12 as. or Re. 1 per mensem per cent. for rupees lent. The pawn-broker either numbers the goods and enters them in a *bahi* under the pawner's name, and keeps the account in the *bahi* as if it were an ordinary *bahi*-loan, or he ties a chit or slip of paper with a note of the loan to the goods pawned, and keeps up the account on the slip. The note always gives the weight of the goods, the time for repayment of the loan as well as the interest.

The women in comparatively rich households are very fond of lending money on security in this way. Their operations are almost entirely confined to women. The borrowers come to them in their houses, deposit their security, which usually consists of gold and silver ornaments, and sometimes clothes and household utensils, and take their money in silver without any one knowing it. Re. 1 will be usually advanced if the pawned silver ornament weighs 3 *bharis*. Ten years ago 2 bharis of silver could have been sufficient for the loan of a rupee. (The price of silver then ranged from Re. 1 to Re. 1 2 as., now it ranges from 9 as. to 12 as.) Again, the women will advance Rs. 30, Rs. 40, if

it is a gold ornament weighing 3 *bharis*. Month after month the borrower pays interest, and by the appointed time the principal is paid back, the security is returned and the matter ends. No accounts or writings or promissory notes are kept, the calculations are all made mentally, the creditors never think of going into court, and they never lose in the settlement of the accounts.

(6) *By Mortgages*.—Very frequently the cultivator has to borrow to pay his rents. In this case the mahajan usually brings the ryot to the Zemindar's cutchery and arranges with the gumastha that he will pay him the ryots' rents directly. When he pays the rents he keeps the *dakhillas* (receipts) and opens an account in his own name in the books. He holds the land in possession as long as the debt is not fully repaid, no interest being charged on the debt. This is called *dakhilla bandak*. Sometimes the mahajan enjoys the land for advancing a loan, while the debtor pays the rents (*khaikhalasi*). Thus in the case of a loan of Rs.100, the mahajan would ordinarily enjoy the produce of a land of ten bighas for five years. The period as well as the land are determined in baitak, or sitting, where the local magnates are present. There is also another condition which is sometimes enforced, that if the property be not redeemed within a certain time which is fixed, the property becomes the mahajan's and the mortgagor has no further claim on it (*kutkabala*). If the mahajan institutes a civil suit for legal possession of the property the court usually allows six months' time for liquidation of the debt, failing which the transaction is confirmed, and the mortgaged property becomes the mahajan's.

There are also other systems of lending money on security now in vogue in the rural tracts of our country. In Eastern Bengal there is a system called *gripi* which might be thus described. Suppose a ryot wishes to borrow Rs.20 from a mahajan. He executes and registers a bond by which he assigns two *pakhis* of his land (a pakhi is a little more than a standard beegha) to the lender in lieu of paying in cash the interest on Rs.20 (the usual rate being one pakhi for the interest on Rs.10). The mahajan always allows the ryot to cultivate the land, for which the ryot gets half of the crops raised, and the mahajan takes the other half of the crops as interest on his capital lent to the ryot. This is known as the system of Gripi. After the mahajan has thus enjoyed the land for a sufficient time, generally about six or seven years, he, as a matter of favour, makes another agreement with the ryot by which interest ceases further to accrue on the capital, and the capital begins to be paid off at the rate of Rs.3 per pakhi of land enjoyed by the mahajan per year till the whole debt is extinguished. This is called *daya-sodhi* (daya, debt; sodhi, to repay).

The loans are usually of very petty sums or quantities, often only five or ten rupees, or a few measures of grain, and have been considered to be amongst the smallest in the world. Loans on mortgages also are very small, usually amounting to Rs.40 to Rs.50. Again, the period of these loans is usually very short. All ordinary village loans are for a term not exceeding one year, the grain loans being for six months or the full length of the crop season. The term of mortgages also is usually

short. In simple mortgages many are of one year or less, while almost all are below three years. In mortgages with possession the average period is about five years. Ordinary loans or mortgages for short terms may be real engines of oppression; they have to be frequently renewed and the cost of stamps, writing fees, witnesses, registration, etc., which comes to a very large sum, has to be borne by the debtor, while they can be used to coerce the debtor into signing any terms on the conclusion of every period. Again, these loans cannot generally be used for making permanent improvements: it is absurd to expect any loan for land improvement or purchase of cattle to replace itself in two or five years with the addition of interest at not less than 12 per cent., exclusive of the penalties for short payments and delays. Thus a loan cannot be wholly spent on improvement, and is usually the result of prior debts for maintenance, for expenditure on a Sraddha, or marriage ceremony, litigation, rents, etc. A fresh loan implies simply more mortgages, deeper entanglement, and finally ruin.

*Cattle and Poultry Loans.*—In villages trade in cattle is very important. Very often young cattle are purchased at credit, *i.e.* at very high prices. The debtor pays by instalments, and if the cattle die he has to bear the loss. A cow is also frequently given by one person to another on the condition that the cow will be returned to the owner after the rearer has taken one calf and enjoyed the milk also. Fowls are also treated in this way. The hen and one-half of the brood of chickens are returned to the owner while the

rearer takes the other half of the chickens. Again, if the rearer sells the bull or cow the owner and the rearer get equal shares of the market value, the owner also getting in excess the original price of the cost, when he purchased it.

*Moffussil-town Banking.*—Along with the village mahajans there is also a distinct class of bankers in muffussil towns whose functions are very important. Like the village money-lenders, they also advance money to individual cultivators, mortgaging their lands or sometimes binding their produce. Thus the rates of interest they charge serve to limit those of the mahajan. They also combine trade with banking. In fact, the export trade of the interior district of the country is mostly in their hands. They also assist a great deal the poorer middle class as well as the landed families of the district when they have to pay revenues to Government.

The most important of the indigenous bankers are those who carry on their business in the important trade centres of the country. Their ancestors in business formerly wielded great political influence. Thus the influence of Juggatt Sett and of Umichand on the politics of Bengal in the Plassey days is well known.[1] The reason of this is not far to seek. Formerly taxes were paid in kind by the people. Certain transactions, however, necessitated the employment of metallic and paper

[1] Far the most famous of the commercial firms was that of the Seths of Mathura, who in former days ranked as the Rothschilds or Barings of Northern India. Founded in the commencement of the century, this banking house acquired immense wealth, and became well-known by their distinguished loyalty to the crown and their widespread beneficence (Crook, "The N.W. Provinces of India," p. 167).

currencies. Thus some officers of the state were paid in money. Standing armies and mercenaries also could not be paid in kind. The institution of banking was therefore developed. The bankers converted the proceeds of the taxes into a useful form, either money or paper, and lent money, whenever necessary, to the state. The same family having monetary transactions either with the Emperors or the Subadars for some generations gradually acquired political influence. Under the British Government, the bankers gradually lost this influence. Still their occupation commands great respect in the eyes of the people. Having lost their monetary dealings with Government they are now chiefly engaged in exchange operations and making advances to commercial establishments. They possess extensive credit, their bills of exchange circulating all over the country. These are called *hoondees*, a corruption of Hindwior Hindoo—a Persian word given to them by the Muhammadans. The city bankers have their agents in every important town of the country who conduct exchange operations by means of the *hoondees* instead of metallic money. These bankers are thoroughly honest, the dishonouring of a *hoondee* being an event very rare among them. Thus the *hoondee* commands wide circulation. A writer has remarked: "The circulation of the *hoondees*, the most perfect portion of the Indian commercial system, is very great, and although millions are invested in them, the loss by bad debts arising out of the dishonour of the instruments at maturity, is a most insignificant fraction per cent." Discount and brokerage are charged. *Hundiyana* or a commission usually

of 3 or 6 pies per cent. is charged by the acceptor on accepting a *hoondee.* There is a specialized class of *dalals*, or brokers, who live on profits derived from transaction on *hoondees*, earning even lakhs. The term for which *hoondees* are drawn vary a great deal. Formerly the terms were at Patna, 41 days after date; Benares, Mirzapur, Lucknow, Bombay, 51 days; Futteghur, Furrackabad and Delhi, 61 days; Lahore and Multan, 121 days. These usages, however, have now changed on account of improvements of the means of communications. Even many of these historic marts like Mirzapur and Futteghur have found themselves stranded in a commercial backwater, and business has sought more convenient centres like Cawnpore, Agra, or Hathras. *Hoondees* are now payable on the 11th, 21st, 41st, or 51st day of their issue. Sometimes they are payable on call, in which case they are called *darsani.* One feature of indigenous banking is very characteristic. The business is usually carried on by *gumasthas* or petty clerks. They are entrusted with the responsible task of issuing *hoondees* in the name of the dhani or the capitalist in the trade, the dishonouring of which could mean his ruin. They are often poor men and yet are never called upon to furnish security. Their remuneration is not high, and they have often the entire disposal of the capital of his master; yet it rarely happens that he loses anything by his dishonesty.

The system of issuing and discounting *hoondees* forms the characteristic feature of the business of indigenous banking, but it cannot be called credit. It is mere mercantile exchange. The firms or trading establishments hardly receive any deposits,

and the issue of notes payable to the bearer or paper money is unknown. This is the reason why rates of interest are so different in the town and the village and everywhere so disproportionate both to the settled condition of the country and to its needs. Credit in India is based not upon the rates of the Indian market merely, but upon those rates, plus the influence of custom, monopoly, opportunity, the stint of capital due to the absence of the deposit-collecting function of banks, and the risk and trouble of making, booking and collecting small loans.

Another important business of indigenous banking is money-changing, the exchanging of one description of coin for another. This is in the hands of the class of small bankers generally known as *poddars*. The *poddar* has now greatly declined in importance. Formerly he was seen in every rural market with a bag of *cowries* on his head. All the early part of the market, he would sell *cowries* for silver to the people who wished to purchase goods, and in the evening, the various hucksters brought back their *cowries* and changed them for silver. In the morning, the money-changer would usually give 5160 *cowries* for a rupee; and in the evening he would give a rupee for 5920 cowries, which was a profit of one thirty-sixth part on every gold mint rupee, besides a fluctuating barter or exchange on all others. The money-changers also advanced *cowries* to servants who received monthly wages. At the end of the month they returned the loan in silver. The money-changer charged seventy puns of *cowries* for their rupee, thus realizing four seventy-fourths

per month for the use of money; but occasionally he lost the principal. The discount charged could be taken at about 3 per cent. in each operation. If the market be held once a week, this gross profit on the capital is repeated 52 times every year; and if it be held twice a week, 104 times.

# CHAPTER II

## THE ORGANIZATION OF RURAL TRADE AND TRANSPORT

THE want of easy and perennial communications is a great economic disadvantage of our country. There are only a few metalled roads in and near the towns. The whole country is traversed by cart tracks. Embanked roads or bridges are seldom found. Thus if a small stream is met with, it is either crossed in boats, or a track deviates a dozen miles in order to ford it at some favourable point. Consideration of economy and convenience and the physical configuration of the country are little attended to. Again, the tracks are passable by carts only for eight months in the year. In the rainy season, travel or traffic by wheels is entirely stopped, and loads have to be carried on the heads by men wading through water or marsh. These fair-weather village roads, as these are called, cost little; they are formed by merely cleaning the surface of the jungle growth, and leaving the approaches to the beds of the intervening streams, without drains or earthworks of any kind. Many tracks, again, are almost unaided by any labour whatsoever, the traffic, very much as a natural stream of water might do, making for itself a passage along the easiest and least resisting line

of country. It is, however, only the easiest unassisted line, for it is often found that the removal of a few comparatively small obstacles to a prodigious extent, shortens and cheapens a natural track between two points distant a great many miles from each other. Thus the surface trade-tracks, often of great width and deeply fissured with heavy ruts, scarcely visible, however, through the thick coating of fine impalpable dust—used for the transit during the dry season of merchandise carried on the backs of pack animals or in rude carts drawn by yokes of bullocks, served probably for untold centuries all the requirements of the internal carrying trade of the country, and even still forms a not inconsiderable portion of the country's highways.

This state of things has to be remedied. If roads are not good, the traffic goes on lightly laden carts or on pack bullocks or even on men's heads instead of on well-laden wheeled carts, thus raising the cost of carriage. Circuitous roads, again, lead to great inconvenience and waste of time, and hamper transit to a considerable extent. Easy transit aids production. Thus economies in marketing have now to be secured in order to stimulate rural agriculture. Indeed, that trading operations will be at a standstill during the four rainy months can no longer be accepted as inevitable. The famines of the country have also drawn frequent attention of the people to the want of proper communications. Again, the development of railways is impeded to a great extent by the want of good feeder roads. Without a system of good village roads connecting all the centres of commerce with the larger markets

nearest the railway, the latter can confer no practical benefits to the district through which it runs only to a small extent. It has been remarked that the very low cost of inland carriage principally due to the great cheapness of draft power during a considerable part of the year, tended in great measure to divert attention from the importance of good village and feeder roads in the earlier days of Indian railroads. Thus the construction of such roads, serviceable throughout the year, has lamentably failed to keep pace with the wants of the railway system, and there still exists throughout the country, a large number of railway stations which are absolutely inaccessible to a loaded cart for five months in the year.[1]

But the remedy is not easy. Metalling is very expensive; constant repairs are essential, for a neglected metalled road is far worse in the rainy season than one quite unmetalled, and, after all, as it is pointed out, the costly macadamized road is only worth its price from June to October. But this is the dull season, when there is no crop to cart to market, and when all the people are ploughing and sowing. As to unmetalled roads, it might be thought obviously advantageous to demarcate at least the main routes, and to garnish with sign-posts and milestones. But if the road is thus marked out the public must stick to that bargain, and will not change when the road has got cut into wrinkles; whereas now the custom of the country allows great latitude to travellers in the matter of short cuts. As a matter of fact in many villages the tracks are ploughed up by the peasants in

[1] McGeorge, "Ways and Works in India."

the rains; and *en revanche* the first cart that re-opens communication after the season may select its own line across the field. Again, in some parts of the country, *e.g.* in Eastern Bengal, the many rivers, khals, beels, marshy and low lands, render it impossible without very great expense to construct permanent roads. It is, indeed, seldom that a highway can be constructed between one important place and another without so large a break as to render it almost useless. Thus the roads are often incomplete. The country intervening is too low; during the rains it is flooded with water, which for many miles is as much as twenty feet in depth. Indeed, in the riparian districts the roads without embankment are almost useless.[1]

By the imposition of the road-cess the Government has introduced a system for providing roads in the country. It is unfortunate, however, that the policy of abolishing tolls on the main roads and the concentration of funds of the District Boards in

[1] Formerly the zamindars secured the lands and roads from inundation by building *Bundhs*, or embankments. The cost of repairing the Bundhs was known as *poolbundi*, and was realized by them from their tenants. Various kinds of embankments have been built. (1) *Ganguria*, or river embankments. (2) *Surhad*, or Purgana, boundary embankments. (3) *Grambheri*, village boundary embankment. (4) *Fari*, second embankments. (5) *Hakiat*, creek embankments. (6) *Khal*, cross embankments in creeks and nullas. (7) *Jalnikasi*, drainage embankments. (8) Masonry sluices. (9) *Bols*, or wooden sluices. The Government has now taken up the task of maintaining the embankments. In 1846, the committee which was appointed to report on the subject of embankments of the Bengal rivers made the drastic recommendation that all existing Bundhs should be removed entirely, and a system of drainage channels substituted. The Government has spent large sums in constructing drainage channels and in repairing or strengthening the embankments of many rivers in the province.

their interest have led to the neglect of the small village roads in the interior. Very little of the road-cess comes near the village, and the road fund is also diverted to some extent to provide for good drinking water, hospitals, etc. It has been suggested that the road-cess should be imposed on special areas for special works benefiting such areas. The money allotted to the Local Boards being small in amount, the roads often get out of repairs. Formerly when the roads became bad, the villagers co-operated together to patch them, but now what had been the usual duty of the villagers ceased to be such when they paid for taxes for the same purpose. Thus while the new system failed to provide for good roads, the old sense of responsibility for the provision of roads was also destroyed.

The waterways also are very important as means of communications in our country. Even now though the railways have stolen much of the traffic of the Ganges (with its tributaries) it still carries more boat traffic than any other river in the world except the Yangtsekiang. In many districts imports by river are found much in excess of those by rail and by road. Importers of goods to whom time is of little value or consequence very naturally select water carriage as being cheapest and most convenient, and there are, again, certain classes of goods such as bamboos, large and small, timber, firewood, hay and straw, rattans, mats, etc., which from their bulky nature and comparative small value will not admit of any other mode of conveyance. In the delta lands of East Bengal, intersected by a network of khals and rivers,

which break their bounds in the rains, the boat is the sole conveyance for a few months of the year. Every house has its own boat, made of long narrow planks of palm wood, in which seven or eight people can sit, so long as one or two remain constantly busied, baling out the water with which it is constantly filling.[1] In the boats the boys go to school, and men from one farmhouse to another to see their friends or to the bazaars on market days. Sometimes the bazaars are laid out in open boats or the shopkeeper in his palm boat follows the winding waterways, displaying his things to intending purchasers, and covering long distances in a short time soon finishes the sale of his stock-in-trade. Throughout the year, in the Sunderbuns the Haturia (bazaar-going) boat is very common. It is a long-shaped swift-going boat, the fore-deck of which is laden with the shopkeepers' wares, tobacco, salt, gur, vegetables, and other articles. Behind this heap about a dozen men are seated, paddle in hand, striking the waters at full length in front and behind as far as the hand can reach, communicating a motion to the boat by which it outdistances all ordinary ones. By dusk the wares are all sold, or the remainder is brought back and the party starts on their homeward voyage. In Chittagong district, the earthenware used in every household is distributed almost from door to door by means of boats, and it is a common sight to see a boat-load of earthen pots drawn up at the very end of a small tidal creek, and an impromptu bazaar established for a week or two; the boatmen stock their earthenware on the bank, make a small fenced enclosure

[1] Nivedita, "Glimpses of Flood and Famine in Eastern Bengal."

and a hut of mats to camp in and barter pots for grain till they have a cargo to take away.

Thus the broad rivers, navigable throughout the year, have been magnificent highways from very early times, and leading to the development of an enormous inland trade indirectly contributed to the prosperity of the agricultural population. Recently, however, the railway development has interfered greatly with this easy means of transport throughout the country. The craft tonnage has shrunk a great deal. Even the bulky goods have come to be carried in railways. Such a tendency is fraught with grave economic disadvantages. Throughout Europe the canals and waterways are now looked upon as a necessary supplement to railways, not merely as feeders but as supplying a need which railways cannot satisfy. They are considered to offer special facilities for the transport of bulky goods, and the cheaper varieties of raw material, which do not demand very rapid transit, and which would be unable to bear the cost of removal by rail. Waterways have been found indeed to have been instrumental in actually creating industries in localities which without them could not have been exploited, and this development has necessitated the subsequent construction of railways for the freights that require to be carried rapidly, in much the same way that a railway requires the concomitant construction of a line of telegraphs. This principle has been accepted generally in Europe, but it is in Germany that it has found the most vigorous expression, and it is said that in that country the new maxim is not "railways or canals," but "railways and canals." In Belgium,

also, the Government attribute the commercial prosperity of the people almost entirely to the facilities of transport that had been secured by waterways worked in combination with railways. It is remarkable that the river traffic there has grown from two hundred and twenty-five million tons per mile in 1880 to five hundred and sixty million tons per mile in 1900. This enormous expansion has not taken place at the expense of the railway, as the tonnage of railway freight trebled in the same period. In India, on the other hand, the railways are expanding at the expense of the waterways, and appropriating a large portion of the traffic which ought to have been carried on our rivers and canals. Many of the rivers, again, are becoming choked and unfit as perennial means of communication, thus further helping the process of gradual extinction of the river traffic. In the district of Burdwan, for example, the importance of Catwa and Culna, which were formerly regarded as the ports of the district, has seriously declined on account of the silting up of the river Ganges near Catwa. The towns are served by steamers for a portion of the year when there is sufficient water in the river. During the rest of the year the trade is carried by carts or country boats, and a good deal is sent by the East Indian Railway and the Ranaghat - Murshidabad lines. In Murshidabad the river in some years in the dry months has not even sufficient water to enable even the small country boats to pass through.

The larger vessels which have been employed in our rivers from time immemorial are now thrown out of use. The larger the vessel, the cheaper will

be the cost of transport, for the cost of the crew does not increase in direct proportion to an increase in size, while the dead weight of the hull and the proportion of the accommodation which must be set apart for the crew are obviously much greater in a small than in a large vessel. Again, the quicker a vessel can travel within reasonable limits the more economical it is. Where river beds are not deep, the boats have to travel slowly, so the cost of transport is increased. Thus the decline of the rivers has been accompanied by a serious falling off of the traffic. The following facts will tell their own dismal tale.

The average annual net surplus of income over expenditure from the Nuddea rivers, the Bhagirathi, the Jalangi, and the Mathabhanga, in the period 1871–81 was Rs.145,918. It came down to Rs.77,495 in 1881 to 1891, and to Rs.1,615 in 1891 to 1901. From 1895–1906 there has been a deficit every year, the deficit being so large as Rs.107,804 in 1906–7. In 1907–8, the total receipts amounted to only Rs.35,229. Though the falling off in the receipts is due to some extent to a reduction of the tolls[1] and to the expansion of the railways, it shows quite clearly that what had been easy and perennial means of communications in the past are being lost to the country now. The minor watercourses again,

[1] There seem little justification for the imposition of tolls on rivers when those on roads have been abolished. The tolls are ultimately paid by the community like a charge upon the taxes; but in the one case a great deal more than the actual cost of the work is paid. An expensive establishment is necessary to collect the tolls, and there is loss due to delay, which is unavoidable in order to measure each boat and to assess its toll. Bribery also cannot be prevented.

which are very convenient means of boat traffic for jute and paddy, also completely dry up in the hot months without being longer fed by the main stream when trade is consequently slackened.[1]

The decline of rivers is sought to be checked by the system of *bundhals*. In the hot months many of the channels have to be deepened by means of *bundh*. A line of bamboo stakes is driven into the beds of the river, mat screens (Jhamps) are then laid down and well secured to the bamboo framework. Thus the current flows with great velocity through the channel enclosed by the Bundh, while on each side of it a large collection of sand takes place, materially narrowing and deepening the stream. The system of *bundhals* under the most favourable conditions is fairly successful, and channels that might otherwise have become completely closed have by means of these *bundhals* been kept open. But when conditions are not favourable, when, for instance, the head of the river is badly situated to obtain a good supply of water from the Ganges, the bundhals are not of much use. During the past two years they have been adopted successfully on the main channel of the Ganges itself, and in the absence of dredging plant they constitute the most efficient and least expensive means of improving the navigation of the crossings.

Again, the bundhal cannot produce permanent results; the work achieved by bundhals in one season can scarcely ever be recognized in the next.

Thus the need of a dredging plant can easily be seen. Whether with the improvement of dredging

[1] "Waterways in Bengal," by O. C. Lees.

plant a time will come when the excavated channels will remain permanently open, is a question which cannot be answered to-day; but this much we do know, and that is that the limit has not as yet been reached at which it can be said that no further decrease in the amount of dredging is possible. The researches of M. Kleiber, the officer in charge of the Volga dredging operations, appear to indicate that the quantity of sand to be excavated at the crossings became less and less each year, until eventually the total amount of excavation required was only half that which had been so happily selected and the soil so judiciously deposited, that after the ensuing flood season the channel was discovered almost unimpaired and required very little attention by the dredgers. It is evident, therefore, that this work is of semi-permanent nature, and it is not improbable that still greater permanence will be secured when improvements in dredging plant have been effected, and when, with more experience, the laws governing the direction of flow at varying stages of water-level have been more accurately determined.

In such work this initial expenditure is the largest that will have to be faced, if the evidence afforded by the experience gained on the Volga and Mississippi can be accepted. It has been calculated with regard to the Bhagirathi that in a few years the cost of keeping the river throughout the dry season will be little if at all in excess of what is paid at present to prevent the river closing altogether.[1]

[1] Objections are also raised against dredging operations on the Bhagirathi. In reply to a representation of several steamer companies to Government in 1909, the Chief Engineer estimated that the

River navigation employs a vast number of boats of various classes. The following are some of the main varieties. The *malini*, which is round both in the stem and the stern, with stem somewhat higher than the bow; it is wider and of greater draught than most other boats used on the rivers; the oars are worked from the roof. The *patli* is a flat-bottomed, clinker-built boat of less width and draught than the malini; the oars are worked from the roof. The *bhar* is a strong, heavy-built boat, capable of carrying stone, coal, and similar articles; it is of equal width for nearly the whole of its length, and has very blunt stem and stern. The *katra* is a flat-bottomed, clinker-built boat, of very light draught for its size; when loaded it is generally towed; when empty it is driven by oars worked from inside the roof. This particular type of boat seems to suit the exigencies of traffic of the Nadia rivers, and the proportion of them to be seen is yearly increasing. The above boats have a capacity from 500 to 2,500 maunds. They are used by up-country *manjhis*, or oarsmen, and ply only during the rains *viâ* Bhagirathi. The *ulak* is a long, well-shaped boat covered

initial cost of the plant necessary for dredging the off-take of the river from the Ganges would be 126 lakhs of rupees, and that, if the scheme were undertaken, the yearly recurring charge for maintenance would be very heavy, such as could not possibly be met by any tollage which the steamer companies could afford to pay; he also pointed out the necessity of caution in the execution of any work in these rivers, as it was possible that any channels which might be made might become larger and deeper, and that those might eventually lead the main Ganges into the Hugli, and thereby ruin the port and city of Calcutta. A further point was that any increase in the volume of water passed down those rivers must mean a decrease in the volume passing down the Ganges below their off-takes, and that such decrease would produce a deterioration in the present navigable channels of the Ganges.

with roof throughout its length. The *sangri* is a peculiar-shaped boat, with a bottom bulging downwards from the keel on each side; it has a very low freeboard, and is in consequence liable to be swamped when the rivers are in flood. The *phukni* is a big boat, open with the exception of a small portion in the stem, which is roofed over. The *budgerow*, or "green boat," is a flat-bottomed boat with a mast and low-roofed cabin. The *saranga* is a dug-out, sometimes enlarged by side-planks and roofed with bamboo matting. A small saranga carries up to eight maunds and can be paddled by one man; a big saranga, which is chiefly used for traffic on the canals and shallow rivers, carries up to 100 maunds and requires a crew of three men. The *oharutya* is of the same type as saranga, but somewhat bigger, and has a movable roof; it carries 100 to 150 mds., and requires three men to work it. The *ad-balam* is a larger dug-out, with a plank bulwark fastened to the side with cane; it carries from 150 to 200 mds., and requires a crew of five men. The *balam* has an extra plank along each side, carries 200 to 300 mds., and requires seven men. The *gadu* is larger, having another plank; it carries from 300 to 600 mds., and requires a crew of thirteen men. The *jalyanois* is a larger gadu with an extra plank, which is used for deep sea fishing.

The bhaule, or the smaller pansi, is a passenger boat with a cabin. The most common boats, however, are the *dinghi* and *donga*, which have been in use from time immemorial both for fishing and carrying passengers and goods. Dongas, or dug-outs, are scooped out from a single tree-trunk, *e.g.* mango, sal-tree, cotton, or palm. They have a

capacity of 3 to 20 mds., and are managed by one or two men. They may be as large as 30 feet long and 2½ feet broad, and can carry, if necessary, more than fifteen men. The dinghi is 25 or 30 feet by 4 feet, with an arched roof of matting in the middle and a bamboo mast. It is usually managed by two men, one at the bow and the other at the stem, and its average burden is 12 to 15 mds. These small boats ply in the interior during the rains and for several months after the rains, until the channels dry up. In times of flood temporary rafts, made of three or four plantain stems, are used for passing over streams.

It is interesting to note that the different classes of boats are each adapted to the nature of the rivers which they generally navigate. Thus the flat clinker-built vessels of the western districts would be ill-adapted to the stormy navigation of the lower Ganges. The unwieldy bulk of the lofty boats which use the Ganges from Patna to Calcutta would not suit the rapid and shallow rivers of the western districts, nor the narrow creeks through which vessels pass in the eastern navigation; and the low but deep boats of these districts are not adapted to the shoals of the western rivers. In one navigation, wherein vessels descend with the stream and return by the track-rope, their construction consults neither aptitude for the sail nor for the oar. In the other, wherein boats, during the progress of the same voyage, are assisted by the stream of one creek and opposed by the current of the next, under banks impracticable to the track-rope, their principal dependence is on the oar, for a winding navigation in narrow passages admits of no reliance on the sail.

Often grounding in the shallows, vessels would be unsafe if built with keels. All the constructions of Bengal want this addition, so necessary for sailing, and it is probably owing to the same cause that so rude a form for the rudder, as that of a large oar, has been so long retained.

The boats are built very cheaply. A circular board tied to a bamboo cane forms the oar; a wooden frame loaded with stones is the anchor; a few bamboos lashed together supply the mast; a cane of the same species serves for a yard to the sail. The sail is a coarse sackcloth woven from twine made of the fibrous stem of the rush crotalania or of the hemp hibiscus, both of which plants are abundantly cultivated throughout Bengal. The trees of the country afford resins to sheath the vessels, and a straw-thatch supplies the place of a deck to shelter the merchandise. The boat hire is determined by the weight loaded and distance traversed. The boat owner pays the *manjhi*, or helmsman, and the *gunya* (tower) as well as the *khewat* (paddler) monthly wages. Sometimes the manjhi manages *in toto* for the boat owner, and gets half receipts, out of which he pays the boatmen and secures his own remuneration. Goods are often shipped on co-operative principle, the mahajan and the boatmen dividing the profit, and the other half is divided among the manjhi and his boatmen, he getting 10 annas and the boatmen 6 annas. When boatmen receive wages, they are also fed by the manjhi.

On land the merchandise is usually transported upon oxen, and sometimes upon buffaloes and horses. The buffalo is more sluggish and a slower

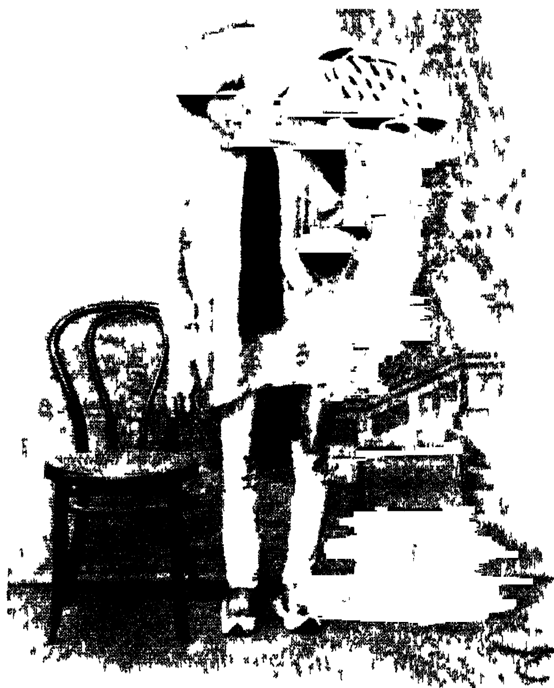
traveller than the ox, and does not carry a much greater weight. Moreover, the buffalo requires more substantial pasture than can be gleaned on a journey from the road-side, and being fond of lying in water would damage the load in the rivers which they have frequent occasion to ford. Still, buffaloes are employed both for draught and carriage throughout Bengal, especially in the western districts. Horses are rare, being chiefly used by Muhammadan or up-country dealers. The hackney carriage, the *thickka-ghari*, is largely in use in towns. Donkeys, being considered unclean animals, are never used except by washermen in carrying soiled clothes to rivers and tanks. The sukhasan, or a crescent-shaped litter covered with coloured cloth and borne on poles to which they are attached by iron hooks, were formerly in use among the rich. They resemble to some extent the modern choturdolas, in which the bride and the bridegroom are carried in the marriage procession. The sukhasan has been replaced by the palki or palanquin. The palki bearers at present are chiefly Urias and Bagdis. The palki was once regarded as an insignia of rank and its use by Hindu Zemindars was forbidden by Nawab Murshidkuli Khan. It is now becoming rare except in villages, where they are used by the well-to-do and for carrying ladies of respectable families. The most common conveyance, however, is the buffalo or the bullock cart. Carts without any covers or with *topas*, mat-covers, only are used for carrying loads to the towns or markets. Those with covers are still the only conveyance in the villages in the interior for people going long distances.[1]

[1] In the Sonthal Perganas, the Sagar consists merely of two solid

The internal trade is mostly carried on at weekly hats, at fairs, or religious gatherings held annually at certain places and at the daily bazaars. There are permanent markets in only a few important towns of the country on the river banks or the largest villages where the people can obtain the necessaries of life whenever they like. The chief articles sold at these bazaars are food grains, oil, salt, fish, vegetables, and also coarse bread and confectionery for the use of travellers who might hire a resting-place at the mudi or confectioner's shops for the night. Where these bazaars have sprung up near a law court or a trading centre, the shops afford shelter to litigants and witnesses or to traders. The litigants and the witnesses may wait for the decision of their cases, or stay in the shops for some time more to enjoy themselves in the town. A weekly, bi-weekly hat, however, is more common, being often the sole source from which the villagers can buy their necessaries, and is a more brisk scene. The people in the neighbourhood finish their dinner early, and carefully ascertaining from the housewives the requirements of the days which intervene between one hat and another,[1] sally forth for the hats.

wheels with bamboos fastened to the axle. They taper to a point at the other extremity, thus forming a triangle on which the goods are placed and rest upon a crossbar, which passes over the necks of the buffaloes or bullocks which draw it. These carts are capable of travelling over steep hills covered with boulders.

[1] Shops are seldom met with in small villages; when found they keep but small provisions, which cannot feed even a single family for a week and are totally unequal to meet the wants of the whole village. Trade was carried on in hats held once or twice a month from early times. Cæsare de Ferdici, who visited the Satgaon kingdom about 1580, described the system thus: "I was in the kingdom four moneths, whereas many merchants did buy or fraight boats for their benefite and with these barkes, they goe up and down the river of Ganges to



THE PHERIWALAH

Formerly barter was more common than now. Thus the peasant as he went to the hat would take a basket containing some vegetables, a bundle of jute, or a quantity of coriander seed with which he exchanged his necessaries. At present, however, he takes only a few annas in his loin-cloth, or if he has some garden vegetables he sells these for money and then buys his stock. The *hat* usually meets in the afternoon. The noise from a concourse of people engaged in simultaneous barter and sale is heard from a great distance and indicates that the hat has begun. The fish market, the cloth stalls, the betel shops are the most noisy, being the most attractive. The oil man is in the market with his measures and the oil in pots, carefully placed in a greasy basket, and the salt vendor sells from heaps of salt small quantities at four annas a seer. The Moira, or confectioner, carries on a brisk business.[1] The potter sells a large number of his cheap *handis*. The druggist, the basket-maker, the pedlar, and even the shoemaker are also there with their respective commodities, busily engaged in selling them at a profit sufficient to cover the expense of purchasing the necessaries. One may also find the washerman, at the corner of the hat, giving back the washed clothes to the respective owners for a pice or two a piece, and receiving and marking with a vegetable ink a fresh supply of soiled cloth to be

faires, buying their commodities with a great advantage because every day in the weeke they have a faire now in one place, now in another, and I also hired a barke and went up and downe the river and did my businesse" ("Hakluyt's Voyages," Vol. V., p. 41).

[1] He is quite well-to-do, and often grows rich and becomes a money-lender or a land-holder. His prosperity is shown by the fact that among the villagers he often possesses a pucca house.

washed and returned on the next hat day. The purchase and sale continue till sunset, when the crowd slowly begins to disperse.

The hats are usually under the Izardars, who have leased them from the Zemindars at a stipulated annual rate. They in their turn levy market dues in order to derive a profit. These vary at different hats. The following rates have been found to prevail in a market in Jessore district :—

| | |
|---|---|
| 1. On river-side huts, or at ghats where boats or carts exchange their loads for rice or dhan sold, the rate levied is per maund . . . . . . . . . . | 1 pice. |
| 2. Dhan is sold and chilly taken in lieu, per maund . . . . . . . . . . . . . . . . . | 2 pice. |
| 3. For every cart laden with capsicum . . . . | 2 pice + ¼ seer of chilly. |
| 4. For peas exported, for every hundred maunds | 11 annas. |
| 5. For *mug* and *mashkalai* beans, for every hundred maunds . . . . . . . . . . . . . | Rs.2-4 per maund. |

HAT RENTS.

| | Rs. | a. | p. |
|---|---|---|---|
| For every boat of pottery . . . . . | 0 | 1 | 0 |
| For every load of pottery . . . . . | 0 | 0 | 6 |
| For other shops, each . . . . . . | 0 | 0 | 6 |
| For gur sold, per load . . . . . . | 0 | 0 | 3 |

Besides these, tolas, or contributions in fruits and handfuls, are levied for the bazaar god or goddess, for the Izardar, for the sweeper, and also for the drummer who invites people for the hat.

The rates in a market in Berhampore, Murshidabad, are as follows :—

| | |
|---|---|
| 1. For every cart laden with potato, brinjal, potol, turmeric, as well as mug, mashkhalai, oror and rice . | 3 annas. |
| 2. For a head-load of vegetables . . . . . . . | 2 pice. |
| 3. For every cart laden with mangoes . . . . . | 4 to 5 annas. |
| 4. For a basket of mangoes (formerly 1½ pice) . . | 2 pice. |
| 5. For one bahngi, or load, of fish (formerly 7 pice) | 2 annas. |
| 6. For a fish basket (formerly 2 pice) . . . . . | 3½ pice. |

The stalls are also hired out, a vegetable stall or fish stall (pat) pays one anna every day. Tolas are also taken. From each tapa of the cart laden with mangoes, 20 or 25 mangoes are given to the zemindar. Handfuls are also taken from vegetable and fish baskets. Those who cannot sell more than four annas worth commodities do not pay any rates. When markets are kept as khash, *i.e.* in possession of the zemindar, the hulshanas and gomustas of zemindar are responsible for the collection of the hat rates and rents.

Considerable inland trade also takes place at fairs and religious gatherings which are held periodically at certain spots in most districts. These are chiefly held at the time of Hindu festivals, or in honour of peers and fakirs and Hindu sannyasis, and collect a large number of traders. Indeed, "selling plantains on the pretext of attending the Rathajatra mela" has passed into a proverb in Bengal. Thus, in Burdwan district the gatherings at Agradwip and Bagnaparah, important places of pilgrimage for the Vaishnabs, where about ten thousand people assemble every year, are mainly of a religious character, but are also used for trade purposes. In Midnapore, the principal fairs and gatherings are held at Tulshichaura, in honour of a celebrated spiritual preceptor named Gokulanund, at Kutabpore, in honour of the goddess Brahmani, which lasts for eight days, and at Gopibullavpore on the river Suvarnarekha, held in honour of Chaitanya, an image of whom is installed. A wealthy rajah of the district made a grant of considerable landed property for the up-keep of the worship of this image, and a large establishment of

priests is maintained for the performance of the ceremonies.[1] In the district of Murshidabad one of the most important melas had for a long time been the Chaltia-Maltia mela held in honour of Raghūnath on the Ramnovomi day. It lasted for a month, the daily attendance being more than ten thousand persons. There is no such attendance now. The most important melas now are the Tulshibihar mela in Jangipore, which lasts for a month, and is attended by nine thousand people, the melas of Gopinath and Shamchand in the Kāndi sub-division, and the Gangasnan mela at Manganpara. Another mela is held in honour of a Musalman fakir, Dada Peer, at Nagar Khargram, and lasts for ten days, in which ten thousand people assemble. The staple articles of trade at these fairs are country-made metallic utensils, stone plates, and cups, "pati" mats, vegetables, etc. Numerous fairs are also held in Nadia, the chief of which are the Rash melas at Navadwipa and Santipore. The mela at Sivnivas on the Bhim-Ekadasi day is attended by about fifteen thousand persons, while those at Kusthia and Ghoshpara attract about ten thousand. In Hughly, a large fair is held at Mahesh at the time of the Car Festival. People combine business with pleasure; and long lines of booths are constructed, in which a brisk trade is carried on in cloths and trinkets, such as looking-glasses, combs, boxes, caps, mats, hookahs, children's toys, etc. The crowd is immense, and on some occasions it is estimated to be a hundred thousand men. At Panduah there is a shrine of a Muhammadan saint named Shah Sufi Sultan, where fairs are held every

[1] "Midnapore District Gazetteer," p. 129.

year in the months of Paush, Falgoon, and Chait. These are well attended, and many shopkeepers come to them from adjoining places. But perhaps the most important fair in the whole of Bengal is that held at the Gungasagar island in the Diamond Harbour Sub-division. The popularity of this fair is as great as ever, and some eighty thousand pilgrims visit it every year. Most of these fairs mentioned above are held on the banks of the Bhagirathi or its tributaries, or other minor rivers, or of big dighies and tanks where good drinking water is close by. At the time of the mela, a large number of merchants and shopkeepers assemble in the places, and, making temporary sheds, stay there as long as the mela lasts. Various things are purchased by the pilgrims, sometimes there is even the purchase and sale of cattle, and especially by the women, who have, perhaps, for the first time been away from their homes; thus there is a very brisk trade done in all kinds of commodities. Thus, when the mela breaks up, the shopkeepers return home with large profits. The importance of the melas in our rural economy is apt to be forgotten. The Jatras, or musical plays and religious songs like the Sankirtan and the Kabi that accompany a religious festival, have a highly educative value to people who are not taught in schools. There is competition between different Jatra parties, and the judges are the common people. The melas, again, serve to some extent the purposes of a modern agricultural and industrial exhibition.[1] It will be

[1] As Mr. Cumming has remarked, melas in Bengal for some time must take the place of other forms of advertisements, such as catalogues, circulars, and newspapers, among the uneducated public.

able to perform its functions more fully in this direction if the modern system of prizes and awards be introduced, and competition encouraged among artisans and agriculturists of the different parts of the country.

Besides these fairs, a large number of pilgrims gather at all the principal ghats on the banks of the Bhagirathi on all important bathing occasions, when crowds of petty traders attend, and miscellaneous articles are purchased by the pilgrims to satisfy alike their curiosity and household wants.

A considerable portion of the local trade is also carried on by travelling brokers and agents, *beparis* or *paikars.* They are sometimes called in Eastern Bengal Chasania beparis (because they travel in boats) and parias. Thus in every village, however remote from a town or trade centre, the Muhammadan beparis are seen hawking about cotton and making it over to katanis, or spinners, mostly the wives of the peasants. For one powa of thread which the housewife spins, the trader give a powa and a half of cotton. This is for the coarsest quality. For the first quality one and three-fourths seers of cotton are exchanged for one seer of thread, and for the second quality two seers of thread are exchanged for five seers of cotton. The paikars sell the spun thread to weavers at the weekly hats. Again, in those parts of the country where the trade consists chiefly in the export of agricultural products like rice, jute, silk, oil-seeds, etc., the big European merchants of the towns have their kuthis, arhats, or warehouses, where resident agents, or gumasthas, come into business relations

with individual agriculturists. They keep a *jama-kharach bahi*, or a daily register, giving an account of the amounts advanced to the agriculturists and the crop received from them, and a khata, or ledger book, compiled from the former, showing each creditor's account separately. No *tamashook* or bond is signed by the creditor, the transaction depending solely on the account-book kept by the mahajan. The gumasthas offer good prices for the crop, freely offer and distribute seeds and loans at a rate lower than what the local mahajan will charge from the peasant. Sometimes the gumastha lends money to the agents, *dalals*, or gives them a profit for the crop they bring in. The latter, in their turn, make advances to the agriculturists, the jute-cultivators, or the cocoon-rearers, as the case may be, and collecting the crop from them, pay back the money or divide the profits with the gomasta. If they fail to get the required quantity from the cultivators to whom they advanced the money, they have to frequent other hats and go about from homestead to homestead making fresh purchases. Thus the European traders who have advanced money through the manager, the gumastha or the dalal, are sure of the quantity of crops they collect for them. Sometimes, again, the gumastha comes into temporary business relations with an aratdar, or owner of warehouse, through whom he advances to a defaulting cultivator. This responsibility is called by the technical name of *jhonke*. The purchases thus made in the interior of a district are sent by the gumastha to the *gadi*, or main firm, in Calcutta for export. In jute chalani, or export trade, the moffusil aratdar charges 1 to

1½ pice per maund of jute he secures for the gumastha in the jute-producing districts.

In the case of the import trade in cotton goods, coals, enamelled ware, umbrellas, cigarettes, and other small articles of luxury which are in request among the people, the middle men do not usually go to every village to deal with the consumers individually. They carry their goods on pack-bullocks or carts, and then dispose them off at the weekly markets or periodical fairs which are held all over the country. At the close of the year they return the money they borrowed from the mahajans of the town and pay a share of their profits. Sometimes the profits are divided between the mahajan, the paikar, and the owner of the cart or boat used in conveying the goods from place to place. Instances of the trader's individual dealings with the consumers are, however, not wanting. The kabuli, with his collection of dried fruits, resins, walnuts, and even warm clothing, is often seen strolling across village fields, where he is a terror to the little folk. The woman *bepari*, with her basket of glass and lac bangles, is also found pushing the sale of her wares among the housewives in cottages, who are easily persuaded by her glib and ready tongue. Sometimes, again, the brass-ware manufacturers employ paikars, whom they give large profits. They hawk about, attracting the notice of the people by the shrill noise of the kansar.

Mr. M. B. Dadabhoy has made the following remarks about this system of selling goods through beparis and paikars. "As an organization for advertisement in distant parts, and ascertainment of market

needs its utility is little. The paikars themselves are not intelligent and enterprising enough. The local industries thus languish from isolation. They have also become more or less effete from absence of adaptation to popular tastes from ignorance. The time has come when the Western methods of exploitation of the market through travelling agents must be adopted by the manufacturer. The middleman is the relic of an antiquated system. But there is one serious difficulty, the isolation of, and the absence of corporate existence among, the petty manufacturers. India is a country of cottage industry: every artisan works in and with the family in utter seclusion from the commercial world. The paikar is just the agent to suit him. But change in the *modus operandi* is possible."

Again, in the present system the trader exploits the grain-producer, or the artisan, to an extent hardly imagined. Both agriculturists and artisans live more or less at great distances from the markets. Hence they are at the mercy of the traders, from whom they get all the information about the commercial world that they can possess. A few instances will be sufficient to show the exploitation. The agriculturist gets advances from the trader for the cultivation of jute in July and he sells in October. For an advance of Rs.5 to Rs.5 8as., he gives a maund worth Rs.9 to Rs.10. For linseed he would give a maund worth Rs.7 for an advance of Rs.5, and Rs.2 8as. worth grain for an advance of Rs.1 8as. three or four months back. Though the interest for the advances has to be reckoned, yet the profits of the trader are clearly

much more than are proper. Unless the sale of agricultural crops and artisans' wares is re-organized, a large portion of the profits of agriculture and industry will fill the purse of rapacious middlemen and intermediaries.

## CHAPTER III

### THE TRANSITION IN TRADE

THE gradual development of trade will bring about an inevitable change in the methods of trade organization, which have been indicated in the preceding chapter. Not only the middleman who carries on his trade individually with his own small capital, but also the method of his buying and selling will be things of the past. The middleman now carries on his trade on an individual proprietary basis. Again, he purchases and sells at retail rates, and he deals only with those commodities which are purchasable and saleable in a particular locality. He commands a local area selling all the characteristic economic products of that area. In India, the specialization in the trade in the economic products is not carried to as great an extent as in the West, but is dominated by the conditions of the local area exploited and served. Throughout the country no shop specializes in oil, ghee, sugar, and in food grains. Very frequently the shop sells all the food grains, salt, sugar, and all the commodities which are required for Indian consumption. Only in towns some specialization has been effected in the sale of cloth and of toys and trinkets imported from abroad; in villages there is little specialization. All these main features of the present internal trade

of India will disappear as trade increases in volume and extent. The retail trade will be superseded by wholesale trade. The trade on an individual proprietary basis will give place to trade on the joint-stock basis, where gains and losses will be shared by a few individuals. Again, specialization will be more fully carried out. As means of communication are developed, trade will come to be localized. Each locality will come to specialize in the trade of commodities for which it has some natural advantages. These changes have already begun. We are actually in the midst of this transition, and already some characteristics of a more developed and better organized trade system have made themselves manifest.

The transition is not easy and will take a long time, and might be accompanied by much suffering, it may be temporary, of particular classes of traders and middlemen. Again, the change will lead to permanent suffering of all classes of people if the specialization in trade due to an efficient trade organization is carried beyond proper limits. In an agricultural country, specialization in agricultural trade and industry should be limited by the character of the community's characteristic needs. Each locality must have the requisite supply of all the necessary food grains produced by its own agriculturists. Where this is not the case, trade becomes a means, not of service, but of exploitation.

Unfortunately in our country our internal trade guided by foreign merchants is gradually tending to exploit our agriculture in the interests of foreign countries. The exports of rice and wheat have

been steadily increasing, while their production has not extended in the same proportion. On the other hand, the increasing demand for raw materials of manufacture, jute and cotton, oil-seeds and dyeing stuffs, has led in some tracts to the actual contraction of the areas under rice and wheat. In the eleven years ending 1911, the increase of exports of rice and wheat has been steady and continuous with but slight fluctuations even in famine years.

Export of rice in million hundredweights—

| 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. | 1909. | 1910. | 1911. |
|---|---|---|---|---|---|---|---|---|---|---|
| 34 | 47·4 | 45 | 49·4 | 43 | 38·7 | 38·2 | 30·2 | 39·2 | 48 | 52·4 |
| 7·3 | 10·3 | 25·9 | 43 | 18·7 | 16 | 17·6 | 2·1 | 21 | 25·3 | 27·2 |

But the areas under rice and wheat have not increased in the same proportion.

Area under rice in million acres—

| 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. | 1909. | 1910. |
|---|---|---|---|---|---|---|---|---|---|
| 70 | 71·6 | 69·6 | 73·5 | 73·4 | 73·5 | 75·9 | 72·8 | 78·7 | 78·5 |

Area under wheat in million acres—

| 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. | 1909. | 1910. |
|---|---|---|---|---|---|---|---|---|---|
| 18·6 | 19·6 | 23·6 | 23·5 | 22·4 | 25·1 | 18·4 | 21·2 | 22·7 | 24·4 |

On the other hand, the area under non-food products is steadily increasing.

Area under jute in million acres—

| 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. | 1909. | 1910. | 1911. |
|---|---|---|---|---|---|---|---|---|---|---|
| 2·2 | 2·1 | 2·5 | 2·9 | 3·1 | 3·5 | 3·9 | 2·85 | 2·87 | 2·93 | 3·1 |

Area under cotton in million acres—

| 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. | 1909. | 1910. |
|---|---|---|---|---|---|---|---|---|---|
| 10·3 | 11·1 | 11·9 | 13 | 13 | 13·7 | 13·9 | 12·9 | 13·1 | 14·4 |

The area under food grains increased by 7·17 per cent. only, while that under cotton and jute together increased by 50 per cent. in the ten years ending in 1906. The total increase in cropped areas during the twelve years since 1892–3, was

17·4 million acres, or about 8 per cent. It was thus distributed—

| | | | | | |
|---|---|---|---|---|---|
| Food crops . . . | 5·4 million acres, or about | 3 per cent. |
| Non-food crops . . | 12·0 „ „ „ | 29 „ |

Thus more than two-thirds of the added acreage during the period was for the cultivation of non-food crops, and less than a third for food grains. But the most alarming fact of the position is that the exclusive growth of raw materials for foreign export is continued in the face of a stationary or falling range of prices and concurrently with it.

The prices of raw materials show an unmistakable tendency to a fall. Jute is an exception, being our practical monopoly. The price of jute has increased by 100 to 150 per cent. But tea and indigo have declined, and linseed and raw cotton have remained nearly the same.

| | 1873. Rs. | 1883. Rs. | 1903. Rs. | 1908. Rs. | 1912. Rs. |
|---|---|---|---|---|---|
| Jute per bale of 400 lbs. . . . | 18¼ | 17½ | 37 | 45 | 55 |
| Cotton candy of 784 lbs. . . . | 255 | 200 | 192 | 267 | 261 |
| Tea, lb. . . . . . . . . . . . | 8 as. | 5½ as. | 5 as. | 6¾ as. | 7 as. |

Thus, in spite of declining or stationary prices, the Indian cultivator grows more and more raw materials for foreign export in preference to foodstuffs; and yet the home demand for food crops is continuously increasing on account of the steady growth of the population, and their prices rising phenomenally. The Index Numbers of prices of the principal food grains (rice, wheat, *jowar*, *bajra*, *ragi*, gram, and barley) have been thus calculated[1]—

| 1873. | 1898. | 1899. | 1900. | 1901. | 1902. | 1903. |
|---|---|---|---|---|---|---|
| 100 | 139 | 137 | 142 | 157 | 141 | 126 |
| 1904. | 1905. | 1906. | 1907. | 1908. | 1909. | 1910. |
| 117 | 147 | 179 | 180 | 131 | 195 | 168 |

[1] It is unquestionable that the increased demand for export of rice and wheat, in face of the contraction of the areas under them due to

The reason of the Indian peasant's preference for the production of non-food products for the foreign market is his growing dependence on the foreign trader for his cultivation. We have already described in the chapter on rural credit the system under which the foreign exporting firms and their local agencies supply the cultivator with cash advances. In tracts where the peasant is hopelessly poor and indebted, and cannot even procure the money-lender's aid, he is forced to seek and accept advances from the agents of the European firms, and grows raw materials for the European markets in preference to food-crops consumed in the country.

The case of jute cultivation is exceptional, the cropping of jute being on the whole more profitable to the peasant than that of foodstuffs. The peasant gets ready money in his hands and feels that a bag of money is worth the same or even more than the granary of his yard, though he sometimes receives

the foreign demand for non-food products, is one of the important causes of high prices in the country. The following remarks from the Imperial Gazetteer of India, Vol. III., bear on this point: "Rice, of which the exports have greatly increased during the last two years (1901–1903), remains extremely dear. Wheat in India proper, like rice in Burma, is being grown more extensively for export, and the recent revival of the foreign demand has produced exports bearing a far larger proportion to the consumption than in the case of rice." Again, "the demand for export has undoubtedly influenced the price of rice and wheat directly, and through them the prices of the commoner food grains." Professor Williams, criticising Mr. Datta's Report on the Rise of Prices in India, says that he does not emphasise this factor, and takes no pains to point out how important the expansion of railways has been in sending up the prices of export commodities in inland stations. He says, "Prices of wheat have risen by a larger percentage at Karachi than at Liverpool, and by a larger percentage in the Punjab than at Karachi." So also taking cotton, jute, and rice into account the effect of railways makes itself clear (*Economic Journal*, Vol. XXV.).

a rude shock when, in a time of scarcity, he has to realize painfully that money is not grain and jute cannot satisfy hunger. But the exception in the case of jute cultivation does not mitigate the gravity of the general agricultural situation in the country, the growing subservience of our peasant to the foreign exporter, and the consequent danger to the food supply of the people. Our agriculture is coming gradually under the direction and control of the foreign merchant, and if the process of exploitation of our agriculture in the interests of the foreign merchants continues for long, the whole nation will be reduced to the condition of serfs on its own soil.

It is remarkable that the network of railways in the country helps this process of exploitation. The railways have, indeed, conferred some important boons on our society. The growth of passenger traffic shows the importance of railways to the people. Pilgrimages have now become easier, their cost has become trifling and the journey rapid, and thousands of pilgrims can now attend religious festivals. The railways are bringing the people of India in different provinces into more close and intimate connection, the annihilation of distance thus contributing to the formation and development of an Indian nationality. Economically, the railways can carry food in time of need from prosperous districts to famine-stricken areas. Indeed the function of railways as carriers limit their use. The railways are not producers, they cannot create agricultural wealth. Their function is to distribute the wealth already produced in the country.

Where the distribution of wealth is carried on in a way injurious to the real interests of the people, railways do more harm than good. In India the effect of railways very often becomes not equal distribution, but the depletion of wealth. The railways, guided and controlled by the European mercantile community, have become agencies of a trade system which has been exploiting our agriculture in their own interests. So far as our industries are concerned, the railways have not given them any encouragement. The freight charges are often too high, and their high rates prevent the development of our cottage as well as factory industries. In America and in Europe cheap freight charges have played a very important part in developing infant industries. In India the railways fail to utilize the industrial resources, while they are exploiting our agriculture in the interests of the European merchants. These men are powerful in India and in England, and are pressing programme after programme of railway construction in the country. The Government should resist this pressure in view of the larger interests of the people. The railways, indeed, now rest on a sound commercial basis, and the Government might use loans raised by it for purposes of railway construction. But it is not proper that any surpluses left after public expenditure should be devoted to railway construction.

Unfortunately the public opinion with regard to this question is not at all strong. What is wanted in our country is a clear knowledge of the comparative economic importance of railways and waterways.

We have already pointed out in the last chapter that waterways ought to be looked upon as an essential and necessary supplement to railways in this country. Bulky raw materials, which are cheap and cannot bear costs of carriage, commodities which need not require rapid transit, should be transported by waterways. It would be an economic loss if railways are used for their transport. Again, in India the rivers are the easiest and cheapest means of transport to the small peasant proprietors and petty artisans and traders.

Where trade has not been centralized, the commodities are generally small in bulk and amount, and the traders and producers can conveniently hire small boats, consult their individual convenience during the journey, and conduct the sale themselves. Further, the facilities which waterways offer for irrigation and drainage purposes are most important to an agricultural community. Thus while railways have been mere carriers of wealth, waterways are carriers as well as producers of wealth in the country. The railways have been obstructing drainage in the country. The Indian Railway Act, indeed, requires railway administration to provide waterways sufficient to enable the water to drain off the land near or affected by the railway as rapidly as before its construction; but it is open to question whether it is physically possible to do so, and there is no doubt that in areas liable to inundation, the embankment does frequently alter the drainage of the country. On one side the floods are deeper and last longer than before, and soil becomes water-logged; on the other, the land

does not receive the same amount of moisture or the same fertilising deposit of silt.[1] This water-logging is no doubt one of the important causes of malaria which has resulted in the low vitality and diminished economic activity of the people. Waterways, on the other hand, provide facilities for drainage and irrigation, leading causes of the prosperity of an agricultural community. We have already observed the gradual decline of our waterways. India is gradually losing her natural facilities for irrigation purposes. Even drainage is suffering. The river-beds have been heightened in some tracts to such an extent that the drainage is away from instead of towards the river.[2] Rivers are silting up at their mouths and become more and more useless for trade and irrigation purposes and make a whole district malarious. Thus the paramount importance of the improvement of our waterways is easily understood.

Not only for the sake of trade and irrigation, not only for agricultural prosperity, but for the very health and well-being of the agricultural community, systematic measures have to be adopted to improve the irrigation of our waterways. Instead of spending more and more on the extension of railways, the Government of India should begin to devote increased sums of money towards the improvement of the waterways. The Famine Commission recommended that 20,000 miles of railways would be practically sufficient, so far as protection from famine was concerned. That limit had long ago

[1] "The Census Report," Vol. V., 1913.
[2] *Ibid.*

been reached. But we are still having more railway lines. From 1890 to 1912 the mileage of railways has doubled from 15,860 miles in 1890 to 31,981 miles in 1912. More lines do not mean greater immunity from famines, they mean greater facilities for exploitation which is the cause of famines. More expenditure on waterways means greater facilities of trade and irrigation, better drainage and increased agricultural wealth and well-being of the people.

But the railways are not solely responsible for this exploitation. The entire organization of trade in which the peasant is helplessly subservient to the foreign exporter is, as we have already seen, responsible for this process. Such a system requires a thorough modification. Our trade is now guided by foreign merchants financed and directed according to their interests. Our system of transport is made to suit their needs, and our agriculture, which is our national industry, is now coming to be exploited for the markets of foreign countries. A more alarming situation in economic life can hardly be conceived. In order to prevent the system of foreign exploitation of our agriculture which makes us more and more dependent on the markets of the world and threatens to jeopardise the food supply in our home market, the present system of agricultural credit has to be re-organized. The re-organization of trade must be preceded by the re-organization of credit. If the peasant becomes no longer dependent on the European merchants for the cultivation of his crops, he will not cultivate such crops which are not more profitable and which do not satisfy the hunger of his

family, ever on the verge of starvation. How agricultural credit can be re-organized and the sale of agricultural crops made to serve the economic needs of the village, will be discussed in a later chapter.[1]

[1] *Vide* especially, pp. 422–434.

# BOOK IV

## *THE ECONOMIC PROGRESS OF INDIA*

# CHAPTER I

## INDIAN INDUSTRIALISM AND ITS LINE OF EVOLUTION

We have studied some main features of the industrial organization of our country. Our study has revealed some striking phenomena which every one interested in our industrial development should always bear in mind. The cottage industries of our country represent a type of economic organization which has been discredited in the West. The industrial revolution in Europe has initiated the tendency towards large-scale organization. The application of steam-power to manufacture was the main cause of this tendency, the cost of steam installation being proportionately less the greater its size. Hence the large establishment could secure economies of production not within the reach of small establishments. Thus the cottage organization greatly declined and became extinct in many industries, being superseded by the factory. But the decline and extinction of the cottage system were not so universal as is very often supposed. Even in countries like England and Germany the cottage industry is still maintaining itself successfully against the large-scale organization, as will appear from a later chapter. In

India, the cottage industry is universally regarded nowadays as a mediæval form of industry which has become obsolete, and the modern factory is idealised. The reason for this general dislike of the cottage industry is not far to seek. Hand-loom weaving, which is by far the most important cottage industry, suddenly and rapidly declined during the last few decades in competition with the mill industry, and this illustration is used to show that the extinction of the cottage system in other industries as well is inevitable. It is well known that the decline of our hand-loom weaving was not due solely to economic causes. The repressive commercial policy of the East India Company was an important factor in this decline. As regards the economic factor, the superior productivity of the mills in Lancashire, it should be recognized that the cotton industry in England has advantages which are by no means shared by all kinds of large industry. The employment of cheap woman labour in the cotton mills in England greatly reduced the expenses of production. Woman labour, however, cannot be employed in every kind of industry. Thus the partial absorption of handwork by machinery in the cotton industry is due to a special advantage inherent in it, and the supposition that all small industries are doomed to disappear, like hand-weaving, is based on a hasty generalization. A study of the cottage industries of the country has, on the other hand, shown that many of them have great vitality even under the present unfavourable circumstances. In fact, the cottage industries are still living forms of economic organization, which, if certain improvements, both in the mechanical

processes as well as in the general character of the business management, are adopted have a great future before them.

The reasons for the persistence of such a type of organization are obvious. It is the product at once of our economic environment as well as of our social and ethical ideals. Agriculture in all lands is always associated with small industries carried on in the home, and in our country the necessity of running small industries in cottages is easily understood if we remember that for nearly three months in the year agriculture is almost at a standstill. Moreover, large-scale farming is unknown in our country on account of our characteristic system of land tenure, and law of inheritance. Property being sub-divided amongst a large number of family members, each person gets only a small plot of land to cultivate. Thus his family usually carries on a subsidiary industry to supplement the income obtained from agriculture. Lastly, the big industry implies certain social ideals which are not acceptable to the people. The methods of Western industrialism cannot be adopted without the disintegration of caste and family; but the Indian people believe in the virtues of joint family life as well as in the influence of the social ideal as embodied in caste. Indeed, they find their work repugnant when it is not also shared by other members of the family, or at least when it is not carried in their midst. The caste in their mind represents the family writ large, and its influence on the life of the individual, sanctioned and supported by religion, still persists. The individual finds in the caste the expression of the

ideal of a larger unity in society. First the family and then the caste mould the character of the individual, checking an anti-social individualism without interfering with individuality. These are still the fundamental ideas of the people of India, and it will be wrong to expect that such ideas will change very soon even amidst the forces which have now been working against them.

Another condition which the adoption of Western industrialism must pre-suppose is the Western outlook of life. The frugal and unconventional life of the Indian presents a striking contrast with the artificial life of the Westerner. The Indian will be happy if he can satisfy his few natural wants. The Western people's attitude towards the satisfaction of wants is different. They believe in the multiplication of wants. A higher social position in the West implies a higher grade of comfort, luxuries and conventional needs. To the Indian, on the other hand, there is only one plane of living, one standard of consumption in theory. In India, comfort and not luxury is sought for, and the ideal of comfort is the same for all classes in society. The same ideal of plain living and high thinking dominates all. The respect for man as man, and for the ideal of self-denial as the means for the realization of God-in-man, the two striking characteristics of the Indian outlook of life, have their influence on the system of industry. India has reared a system of economic organization on the firm basis of social equality and justice. In the Indian industrial system, no one is master, no one is servant. Hand-power is more important than the machine. Artisans work on their own account,

and not at the bidding of any masters or employers or of machinery. It is the production of wealth by free men. There is real concrete equality between man and man in the Indian economic organization. Every one is free to pursue his economic activities in his own way. No one is forced to be idle, because no one depends for work on another. Labour is healthy and pleasant, and there is sufficient leisure. The end of production in India is not wealth, but the leisure which wealth brings. And this leisure the Indian knows to use profitably in the development of character, in his intellectual and moral progress. The system of production, again, allows a large amount of leisure. In India agriculture is more important than industry, and industry is carried on at intervals with agriculture. Man controls the economic machinery, the machinery does not control man. Thus the labourer tills the land which his forefathers tilled before him. Their wealth he has inherited, and along with the wealth he has also inherited their responsibilities, and he will bequeath his wealth with his responsibilities to his sons and grandsons. Not only the magic of property but also the duties and obligations of family life make the Indian peasant one of the most industrious workers on the surface of the earth. Industries are carried on in cottages. And there has been developed a system of industrial credit and trade according to which the middlemen and traders regularly come to the artisans' cottages with ready money or with raw materials of the industries, supply these to the artisans, and go back to their markets with their assortment of wares. The organization of home

industries has thus created an appropriate organization of money-lenders, traders, and middlemen. The moral element involved in the artisan's work in the home amidst the members of the family is highly efficacious. The collaboration of the family members not only economizes expenses but sweetens labour. Culture and refinement come easily to the artisan through his work amidst his kith and kin. Again, in the Indian industrial world there is no room for hard rivalry and indecent competition. The people have only one ambition, that of transmitting their patrimony, their land or their immaterial wealth, their hereditary skill in an art or handicraft, to their sons and grandsons, somehow maintaining themselves and their family members. They will not work more, in order to earn more money. They will be satisfied if they can get a morsel of food twice a day without being borrowers to any body. This content is born of racial habit. And to this content, the absence of any ambition or zeal to amass wealth, is due the stability of the Indian economic organization. The Indian economic system never gets out of joint. Economic disorders are unknown in India. The Indian economic system is to be figured not as the temporary equilibrium of rival forces, but rather as the permanent equilibrium when motion and energy are restricted in their operation in their proper spheres. The Indian industrial world does not therefore engender conflicts and disputes, strikes and lock-outs. On the other hand, it disciplines the people in healthy social relations. The craftsman's relations with the assistants and apprentices are most cordial, to which correspond certain well-

defined duties and obligations. The middleman, the trader, or the money-lender in their dealings with the craftsman are always straightforward. They do not exploit the labourer but maintain him. The craftsman also looks towards them with due reverence. Indeed all the relationships which are entered into in the industrial world, *e.g.* between debtor and creditor, employer and employed, master artisan and apprentice, artisan and trader, landlord and tenant, and their respective duties and obligations, call for a perpetual exercise of the social virtues and humanities. It is for this reason that the Indian industrial world is more humanized and socialized and has lost more of the barbaric self-assertion and aggressiveness, and acquired more patient dignity than the industrial world of the West which is without such discipline. And this discipline in healthy social intercourse has also found expression in the proverbially gracious and dignified manners and frank hospitality of the people. It has certainly made the life of the Indian more beautiful and enjoyable. There is no doubt that the Indian character, which has been the outcome of the discipline enforced by the characteristic social structure of the people, cannot easily be modified in order that Western industrialism can flourish in India. The contractual type of relations between man and man which Western industrialism presupposes cannot soon be substituted for the existing type based on status, sanctified by traditional customs and usages and supported by popular songs, romance, and folk-lore. It will be a miracle if the duties and obligations involved in our social relations are soon

forgotten and merely monetary relations established in society.

It is, indeed, evident that the socio-economic institutions, laws, customs, and character of the people cannot change their essential nature in the near future. The economic activities of the Indians will be carried on within the limits of the social environment, and the moral conditions which it implies. Western industrialism presupposes the existence of other moral conditions and a different social environment. As long as there is no fundamental agreement of these in India and the West, the line of economic evolution will be different. This is the familiar doctrine of the relativity of social phenomena, the significance of which, however, is not even now fully understood. Western sociologists judge the progress of different peoples by an abstract and arbitrary standard deduced from the evolution of Western civilization. A recent writer on economic history asserts: "The essential condition of all sound sociological inquiry is the comparative consideration of the entire series of the most *complete* evolution known to history, that, namely of the group of nations forming what is known as the occidental commonwealth or more briefly the West." Such a view of social evolution which regards the Hebraic-Græco-Romano-Gothic civilization as representing the culmination of cultural progress and views the eastern types of culture "as if they were either monstrous or defective forms of life, or only primitive ancestral forms, the earlier steps of the series, that have found their completion in European society and civilization," is essentially false. Dr. Brajendra Nath

Seal, who corrected this narrow view of human history, remarked in his Introduction to Vaishnavism and Christianity: "With the ethnological material at our disposal, it is a gross and stupid blunder to link on Chinese, Hindu, Semitic, Greek, Roman, Gothic, Teutonic in one line of filiation, in one logical (if not chronological) series. No race or civilization with a continuous history represents a single point or moment. Hindu culture too has passed through most of the stages observed in the growth of the Hebraic-Græco-Romano-Gothic civilization. The same may be said of Arabic and Muhammadan culture. To conceive these statically, to reduce each living procession to a punctual moment in a single line is to miss their meaning and purpose." In fact, the idea that western humanity represents the culmination of the ideal of humanity is based on the narrowness and prejudices of western sociologists. "Universal humanity," says Dr. Seal, "is not to be figured as the crest of an advancing wave, occupying but one place at any moment and leaving all behind a dead level. For universal humanity is immanent everywhere and at every moment." And he continues, "The diverse ethnic types are all essential to the full unfolding of the plan and pattern of universal humanity, under our multiform geographical and historical conditions. The ideal of humanity is not completely unfolded in any race, for each race potentially contains the fulness of the ideal, but actually or explicitly renders a few phases only, involving other aspects more or less implicitly. To trace the outlines of the universal ideal, we must collate and compare the fragmentary imperfect reflections not at all in

eclectic fashion, but as we seek to discover a real species or genus among individual variations and modes. The loss of absence or a single note in this harmony would mar it fatally; each colour is complementary to the rest, each geographical and historical environment requires its own type for perfect adaptation. The whole system of Nature, the entire process of history, would show a gap, a discontinuity, a wound, if one such thoroughbred type were suppressed or obliterated, and the recuperative process of evolution would slowly re-evolve the type, with proper modifications, and painfully heal the wound in the centuries to come."

From this broad, philosophical view of social evolution, the question of the adoption in India of the methods of Western industrialism has to be solved. The economic institutions of the Western countries are suited to their characteristic physical and social environment. They have their origin in the racial characteristics of the particular peoples inhabiting them. Similarly, the Indian geographical and historical environment has evolved its characteristic type of economic organization, and the future economic evolution must proceed along the line of the past. The perfect economic organization is that which is perfectly adapted to the environment, and in the forces of adaptation the historical antecedents and the racial characteristics of the people which have evolved in the past are too strong to be neglected. Thus, the attempt to force systems and methods of industrial organization, economic arrangements, and institutions which have admirably suited a different geographical environment, will always be futile. In the first place, the people will

not be able to work them successfully. Thus the struggle and the pain during the period of transition will be severe. Secondly, the institutions cannot be adapted to the geographical and historical conditions. Thus economic progress will be retarded, and in many cases economic activities will be paralysed. Lastly, the particular physical and social environment which requires its characteristic type of economic organization for perfect adaptation will re-evolve the type after a period of forced interference and substitution, and consequent stagnation, and degeneration.

These will be the inevitable results if the methods of industrial life in the West are introduced into the social organization of India and the socio-economic traditions of our country neglected, on the pretext of the superior civilization of the West. There is, indeed, no immutable superiority of certain racial types over others. Racial differences are the product of adaptation to different environments, and every race, even the most backward, can progress indefinitely, under favourable conditions of environment, physical and social, unfolding a phase of universal humanity, and playing no small part in the development of humanity.

Such are the fundamental considerations which should guide a student of Indian economics determining the course of the future economic evolution of India. The problem that should be uppermost in his mind would be this, How should India *modify* her present social environment, her existing socio-economic institutions, and the moral conditions which these presuppose, in order that she can best

develop the ethnic or cultural type which she represents? India's old-world economic progress has now been checked. What changes must India's socio-economic institutions undergo in order that India shall be economically progressive and shall yet be India or a better India still, retaining, developing the Indian type and the Indian spirit? That is the question which is now crying for solution. We will attempt an answer.

But before proceeding further let us remind the theoretical economists who are anxious to see that the methods of Western industrialism are adopted wholesale in India, that these themselves are now being condemned even by Western sociologists. The Western economic organization, even in the minds of Western thinkers, is essentially faulty; and there is a persistent cry for reform, and even for destruction. We will indicate in the next chapter the main points of criticism which have been levelled against Western industrialism by Western economists, and show that what has been put forward as an ideal for imitation in India is itself discredited in the West.

## CHAPTER II

### THE COMING CHANGE IN WESTERN INDUSTRIALISM

INDIA is much more busy with the problem of the distribution of wealth than with the problem of production. What wealth she produces she attempts to distribute equitably amongst all classes of society, and this is the object which her socio-economic institutions, like the joint family and caste, her system of land tenure and law of inheritance, her social and ethical ideals, seek to achieve. In the West the problem of distribution is subordinated to the problem of the production of wealth. Thus the industrial revolution of the West has set out on a wrong path, and hence it is that in the West, the most brilliant achievements in applied science and discoveries in mechanical arts have not increased the general well-being of society. Enormous individual fortunes have no doubt been produced, middle-class prosperity created, but the condition of skilled and unskilled labour has only very tardily been improved, and, generally speaking, life and its higher well-being have been sacrificed to wealth-making. Wealth has increased, but the increase of wealth is not enough for social health and well-being; for everything depends on how wealth is distributed and what are

its effects on the culture of the nation. In the West, the enormous increase of wealth has not been able to do away with the appalling poverty and degradation of the labouring classes, who are by far the most numerous in society, and amongst all classes of society there has been a decline of culture. Thus Western society, in its feverish pursuit of wealth, that is, of the means of luxury, misses the well-being which is the end and goal.

We will give a few extracts from the writings of some leading economists and thinkers of the West, which will testify to the most inequitable distribution of wealth and also a remission of culture in Western countries. We have a very good statement of the modern economic problem of the West in Max Hirsch's "Democracy *versus* Socialism." "The problem which, with ever increasing urgency, demands a solution at the hands of our society, if peace and progress are to be preserved, is that of the persistence of undeserved poverty in the midst of abundant wealth, and of unemployment in the midst of unsatisfied desires."[1] In the words of Mr. Joseph Chamberlain, the same problem has been thus emphasized: "Never before in our history was the misery of the very poor more intense, or the conditions of their daily life more hopeless and degraded ; the vast wealth which modern progress has created has run into pockets ; individuals and classes have grown rich beyond the reach of avarice, but the great majority of the toilers and spinners have derived no proportionate advantage from the prosperity which they helped to create."

The over-crowded, filthy cities, the depopulation

[1] Max Hirsch, "Democracy *versus* Socialism," Introduction.

of rural districts, the enormous disparity of wealth, and the consequent conflicts of labour and capital, and chronic social interest, which are the inevitable evils of the factory system, have in fact threatened the very foundations of Western society. The people in the West have begun to think seriously what the Chinaman said to them: "Your people are no doubt better equipped than ours with some of the less important goods of life; they eat more, they drink more, but there their superiority ends. They are less cheerful, less law-abiding; their occupations are more unhealthy, both for body and mind; they are crowded into factories, divorced from Nature and from ownership of the soil." [1]

Thus Western society, in order to secure economic efficiency has forgotten its real end. Economic efficiency is required, for efficient production alone can give the leisure as well as satisfy the conditions of healthy and complete living. But it should always be remembered at the same time that economic efficiency is not the end of civilization. It is only a proximate end; and it should therefore work within the limits of, and in subordination to, the governing end, which is complete and healthy living, culture in the highest sense of the term. As Professor Henry Jones has remarked, "The industrial world presupposes, exists within and in virtue of, a wider social order whose interests are as multifarious as the desires of man, and which is indefinitely richer in ethical content. At its best it is only a means and instrument, and can supply man with only the raw material of his real life. Its value does not lie in itself, but is relative to its use,

[1] Lowes Dickenson, "Letters from John Chinaman."

and depends upon the kind of satisfaction which is sought by means of it." For, after all, the purely economic man is an academic fiction. After a man gets his living he has got to live: thus industrialism does not comprehend the whole of life. Wealth is not adequate to the perfecting of culture: culture, as a recent writer puts it, is the appreciation, not contemplative alone but active and efficient, of the non-economic values. And if the measure of a nation's true success is its culture and higher life, the amount it has contributed to the truth, the moral energy and intellectual happiness, the spiritual hope and consolation of mankind, the West cannot face this just criterion boldly. Wealth has no doubt increased astoundingly, but has culture increased? It is significant that many writers in Europe and America are now dreading a wide remission of enthusiasm for high moral ideals. In a forcible article on the decline of American culture, E. Benjamin Andrews says, "wealth-gaining is an obtrusive, all-engrossing phenomenon over-shadowing all else—massive, ubiquitous, obstreperous, never out of sight or out of mind. By its size it occludes the sun; the noise of it deafens reason's ear. We do not refer only to those professedly engaged in making riches; the frenzy spreads to all. If any perchance ask how much one must have to live on comfortably, the chorus answers at once, 'The utmost you can get.' It was said by him of old times, 'Life is more than meat,' the modern criterion would seem to be that life is identical with meat, and the body with raiment." There is in Western society not only a wide-spread contempt for the simple life, a falling off in men's desire to promote the things of

the mind, not only less thought than once of ideals, but less mobility of mind as well. Charles Wagner says that in ancient society the people had variety in uniformity; in modern society they have monotony in the midst of change. Industrialism and fashion tend to crush out all originality, and flatten individuals into specimens. "The city possessing the engines of civilization floods the country with its products, beating down and running out local peculiarities, local manners, costumes, provincial songs and idioms disappear. Towns and villages drained, debilitated, each of its individuality are but the feeble images of cities." Professor Royce rightly argues the mischief of this "bleaching process," pointing out the incalculable benefit to the national character of local idiosyncrasies. "Industrialism, again, involves another curse, the division of labour, as destructive of spiritual as it is creative of temporal wealth, and not confined any longer to mills and shops, but felt as well on 'Change as at the Bar, in newspaper making, and even in teaching. Everywhere specialization breeds pettiness, an arid mind, thinking with the spinal cord instead of the brain."

Thus the modern phase of industrialism in the West is tending to destroy the very roots of culture and originality, and is thus defeating its own ends. Everywhere in the West there has been a reaction against the present methods of Western industrialism. This reaction is comprehended under the general name of socialism. But side by side with socialism, which proposes drastic changes and revolutionary measures, there are also the co-operative movement, the arts and crafts movement, the movement

for profit sharing and co-partnership, the increasing desire to once more relate the life of the people to the land. The Western industrial world is in a state of transition. A radical change in the Western industrial organization is inevitable. Beneath the rush and roar, clash and clamour of the million horse-power industrialism, new ideals are slowly taking shape which will proclaim a more healthy, a more ethical life of the people. A recent German economist has thus spoken of the new age of idealism that is coming, and will satisfy the call of the fuller and the deeper life : "Mankind up to now has not known how to put the riches it has gained to the best possible use. But he who has eyes to see and ears to hear can feel the new age approaching, with newer ideals that fall like sun's rays on the heart of the present generation. We are tired of the material prosperity which our fathers made for us, and of which they were so proud. We want something else. We want a different kind of culture. In the next age, Idealism will take the place of Materialism, and mankind will be healthier in body and soul."

Thus, if Western industrialism is itself in a process of radical transformation, the necessity for an independent economic evolution of India, following the socio-economic traditions of the country, cannot be overestimated ; and this not only in the interests of Indian culture, but also for indicating the main lines of economic evolution.

# CHAPTER III

## THE INDUSTRIAL PROBLEM OF INDIA

### (a) *The Case for the Factory Organization*

We have already seen that in India Western industrialism is brought face to face with a type of social organization, the product of many centuries of slow evolution, whose characteristic features are fundamentally different from it. The disparity of wealth, the luxury of the few capitalists and the appalling poverty of the labourers, and the consequent chronic social unrest, present a striking contrast with the spirit of co-operation which pervades the Indian industrial organization. In India social institutions, like the joint family and caste are dominated by the ideal of an equitable distribution of wealth in the community. Western industrialism, which has been built up by individualism very often anti-social in its character, has become an enemy to these more or less communalistic associations. The communalistic ideal is even now very strong in the country, and it fights shy of the methods of production of the West in which the excesses of a crass individualism have threatened the very foundations of social life. Not only is Western industrialism thus meeting with resistance in India, but its very roots are now being sapped by the criticisms directed against it by

the economists and social philosophers in Europe. When the West is thus revising her judgments of her own economic institutions, the questions which now naturally arise are: Should India adopt the Western economic institutions in order to repeat in her own soil the social evils of the West? Should the Indian industrial system be a feeble echo of the Western organization with its trade-union disputes, strikes, lock-outs, and social crises? Should India introduce into her country the conflicts of labour and capital, and thus destroy for ever the communal spirit which dominates her economic life even in the present day? Should she not, on the other hand, develop her own economic system, the product of centuries of past evolution, and adapt it to the needs of the times?

The problem before India is, therefore, this, How should India modify her own economic institutions to withstand the economic disintegration that is going on throughout the land? Throughout the country the decay of village agriculture is proceeding *pari passu* with the rural exodus. While agriculture, which is our national industry, is declining, our dependence on foreign manufactures is only too well known. The extent of our economic dependence is clearly shown by a study of import and export figures. The total value of exports in 1911 was 238.1 crores, and of imports, Rs.197.51 crores. In 1913–14 the exports were Rs.244 crores, and the imports Rs.191 crores. The predominance of manufactured articles among the exports is quite as noticeable as their subordinate position among the imports.

*Of our Total Exports.*

| | |
|---|---|
| 1. Raw materials formed . . . . . . . . | 50·1 p.c. |
| 2. Articles of food and drink . . . . . . | 26·5 ,, |
| 3. Indian manufactures . . . . . . . . . | 22·4 ,, |
| 4. Miscellaneous . . . . . . . . . . . | 1·0 ,, |

There has been a conspicuous increase in the aggregate value of imports in recent years. It averaged annually in the five years ending 1909–10 almost Rs.116 crores, in the following three years Rs.143 crores, rising to Rs.191 crores in 1913–14. By far the largest proportion of the increase occurred in the class of manufactures which constitute nearly 80 per cent. of the imports.

If we look to the principal manufactured articles of import, we shall at once come to the conclusion that they are not economically indispensable. The raw materials of most of them are produced in the country, but these are exported to foreign countries in order to be manufactured into finished commodities there. The reasons for following such a line of action which involves twofold disadvantages, viz. loss of wages and profits which have to be paid to foreign labourers and entrepreneurs, and loss of money due to freights, is that our industrial organization cannot efficiently utilize the natural resources of our country. The small artisans working in their cottages with small capital, and a few necessary tools and implements, and no organization for effective sale, cannot be as efficient as entrepreneurs in Western countries, producing on a large scale with the most specialized forms of capital, and commanding a highly specialized machinery of sale and exchange. Thus the small industries of India are being superseded by the manufacturing industries of the West, whose

products have been flooding our markets. There is, therefore, a consensus of opinion for the establishment of new capitalistic industries in our country similar to those of the West.

The Indian public strongly feels the necessity of calling into existence the requisite business ability and technical skill of the people, and the plentiful capital for manufacturing the commodities, now imported from abroad, in Indian mills and factories. The demand for technical education is thus strong and persistent throughout the country. Several public bodies have been organized in different provinces for imparting technical education, or for sending young men to foreign universities to be educated in polytechnic institutes, or to serve as apprentices in workshops and industrial establishments. In order that manufacturing industries may grow in number and in strength within a few years in the face of the competition with the West, the Indian public opinion is strongly protectionist.

The industries of the country, says every journalist and every public man of the country, are young, and, managed and organized as they are by men necessarily as yet of lower business experience and ability than those in the West, need a definite support from the Indian Government by means of import duties, or by bounties.

It is, however, a striking limitation of the new industrial spirit which has been awakened in India that there is no clear public opinion with regard to the nature of the industries which ought to be started in the country and protected by the Government. Every new factory established is hailed by people of all shades of opinion, if it tends to supply

needs hitherto supplied by the manufacturing industries of Europe, no matter whether it competes with the indigenous cottage industries of the country or not. The cottage industries of India are regarded as obsolete, as mediæval types of industrial organization which will have no place in the future economic evolution of the country. They are, it is said, bound to be superseded by manufacturing industries sooner or later; and hence it is better to have their place filled up by Indian manufacturing industries than allow European industries to take the lead in the process of supersession, which is inevitable.

The time has now come when we have to consider seriously the question, What will be the place of the cottage industry in India's economic evolution? Is it inevitable that our cottage industry will be superseded by the modern factory? Is it desirable? Are there in our industrial life such features as might lead us to suppose that the growth of the factory in India is a necessary step towards the necessary concentration of industry? Is every kind of factory industry welcome under the circumstances, even if it competes with the cottage industry of the country scattered throughout the country? What form of organization of industry, again, will be the most economical?

There are certain conditions in which the concentration of industry is inevitable. The advantages of centralization from a technical point of view under these circumstances are so great that the domestic industry using hand-power cannot live at all in the competition with the factory industry. Thus in industries in which a disproportionately

large amount of durable plant, and the co-operation of a large number of labourers are necessary, when huge metals have to be dealt with, large establishments are inevitable. The mining industries, the iron works, the steamer and ship-building industries decidedly belong to this category. The small-scale business under these conditions results in a waste of efficiency, labour, and skill, which should always be deprecated. Indeed, in the interest of efficient production, which alone can give the leisure as well as satisfy the conditions of healthy and complete living, production on a large scale under certain economic conditions, is equally necessary with that on a small scale. Each has its own appropriate fields.

Generally, it has been recognized that when commodities of the same pattern are produced to meet a large and continuous demand, *e.g.* in industries engaged in supplying the mechanical and routine needs of men, large-scale production and the use of machinery are inevitable. In the production of commodities of precisely the same shape, size, colour, and material, machinery will always excel, because of its obvious advantage in the increased output of motive force it can apply to industry, as well as the greater precision in the application than in the case of hand power. It is easily seen that the satisfaction of the primary animal wants,—hunger, thirst, cold, etc., is common to all; in those purely physical demands there is less qualitative difference in different men: as the needs are the same, the consumption will be the same. The absence of wide individual differences of taste indeed marks out the commodities for routine or

machine production. As individuals are nearest alike in their prime physical needs, so, as they gradually develop higher material wants, and, after those are satisfied, æsthetic, intellectual, and moral wants, their individualism becomes more and more marked. It is therefore in the most highly developed, or, as they are sometimes called, the more "artificial" wants of men, that the diversity of individual nature shows itself most strongly, and demands a satisfaction peculiar to itself which only art can give. In a highly evolved society it is likely that many physical needs, and even some intellectual needs, will be common to all, and will engage little individual attention.[1] They may be regarded as routine-wants, and will be satisfied by machine-made goods. Indeed, it seems reasonable to expect that on the whole machinery will retain and even strengthen and expand its hold of those industries engaged in supplying the primitive needs of man, his food, clothing, shelter, and other animal comforts.

If we study the development of Indian manufactures, we will find that the industries in which we have been making the best progress during the last two decades are the manufacture of cotton and jute, coal and gold mining, and the petroleum industries. In 1901 there were 197 cotton mills with a capital of 16 crores. In 1908 there were 232 cotton mills, and the capital increased to 19 crores. In 1914 the capital became Rs.20.07 crores, and the number of mills was 263. The jute mills also increased in number from 36 in 1901 to 52 in 1908, and the capital increased from 4.3 crores to 6.75

[1] *Vide* John A. Hobson's "Evolution of Capitalism."

crores. In 1911–12 the number of jute mills was 45, and the capital 7.29 crores. The number of looms at work increased from 16,640 and 30,824 in 1901 and 1908 to 37,316 in 1912. The coal industry has made a phenomenal progress. The output of coal for the whole of India in 1908 was 12·76 million tons, while it was 6.6 millions in 1901. In 1912 it was 14·70 million tons as compared with 12·75 million tons in 1911. The petroleum industry has also made rapid strides. The output has increased from 50 million gallons in 1901 to 176·6 millions in 1908. In 1912 the output was nearly 250 millions. We have a few other larger industrial concerns, but they are either languishing or insignificant. We have made little progress, for example, in the sugar industry, the oil-pressing industry, paper manufacture, and wool and silk manufactures. While in leather manufacture, glass manufacture, the manufacture of umbrellas, stationery, and in metal manufacture, our progress is insignificant.

In the mining industries the local production on a small scale was doomed with the development of metallurgy and chemistry, and the obvious advantages of large-scale processes in Europe. Thus the European chemist, armed with cheap supplies of sulphuric acid and alkali, and aided by low sea freights and increased facilities for internal distribution by a spreading network of railways, has been enabled to stamp out, in all but remote localities, the once flourishing native manufacture of alum, the various alkali compounds, blue vitriol, copperas, copper, lead, steel, and iron, and seriously to curtail the export trade in nitre and borax. The

potentialities of the mining industry of our country, conducted on a large scale, are indeed great. The Tata Iron and Steel Works mark an epoch-making advance in mining and metallurgy, and are fraught with immense possibilities in the future. Ship-building will naturally follow the manufacture of steel plates, and India might become the workshop of the East. All this can become possible when the industry is carried on on an extensive scale with a large output of capital, and an enormous labour force.

If we leave aside mining and mineral industries in which the advantages of a large establishment are obvious, and study the two other important manufacturing industries, viz. cotton and jute mill industries, we find that there is little or no competition with the indigenous industries of the country in their case, or they are even supported by the latter. In the cotton mills the cloth goods, which are mostly manufactured and have a sale in the country, are produced in the handlooms only in insignificant quantities. The handlooms may be said to manufacture only special classes of cloths. The bulk of the very coarse classes of cloth, warp counts of 6s. to 16s., 6s. to 20s., is woven on the handloom from yarn spun in Indian mills. This cloth has been considered as coming within the absolute sphere of the handloom. Though foreign cloth is being imported, the improvement of the handloom industry, both in the mechanical processes as well as in the economic organization, will, it is hoped, tend to check the imports. In the jute mills, again, there is no competition with handloom weaving, the products of which consist mostly of

coarse blankets, carpets, and rugs. The jute mill industry, again, has some special advantages of its own. Outside India, the manufacture of jute fabrics represents a business monopoly. It has also to be recognized that it is conducted solely by European capital and business ability.

In the case of the sugar industry, there are only a few factories in India, and no one of them can be said to be prosperous. The difficulties of organizing successfully a modern type sugar factory in India are very great. It is very difficult to get a sufficient supply of sugar-cane at a reasonable rate. Half of the total acreage under cane is in the United Provinces, and in some districts the sugar-cane area is sufficiently large and compact to justify the establishment of large factories like those of Java and Mauritius. But in other provinces, the sugar-cane area is not very compact, and if factories can be started at all they must be of moderate size. Thus there is ample scope for the indigenous cottage industry. In Madras and in Bombay especially, the demand for gur is steady and sometimes greater than the supply. Hence the cottage industry there is prosperous. In Bengal, which comes next to the United Provinces as regards area under cane, several factories are now running, but they are all more or less languishing. Big factories cannot get an adequate supply of cane, and unless they are economically managed, cannot face the competition with foreign sugar. The Java sugar especially can compete successfully, Bengal being on the sea coast, and it is being recognized that it is the best course, under the circumstances, to concentrate the efforts on improving the cottage industry by employing

better methods instead of introducing the central factory.

In the case of leather manufacture, the technical advantages of producing on a large scale and of the use of electricity in chrome tanning are very great, and there is no difficulty in getting an adequate supply of raw hides and skins at reasonable rates. The field for leather manufacture on a large scale is, therefore, very extensive, the scope of the cottage industry in future being, therefore, limited to repair work, the manufacture of fancy articles, book-binding, etc. In leather manufacture, as well as in several other industries, like oil-pressing, flour-milling, cotton-ginning, wool-weaving, beer-brewing, and paper-making, the possibilities of success are very great. In these industries we have not made any appreciable progress. In glass-making the factory system has been tried, but the result has been a failure. In Belgium and Bohemia, the two centres of glass-making industry in Europe, as well as in Japan, however, the cottage industry is successfully holding its own. It has been proposed that small beginnings should be made to experiment in glass manufacture on the lines of the indigenous cottage system of the country.

We have pointed out the scope of large industrial establishments, and shown how little has been our progress in this direction. In order that large-scale establishments can succeed in India, we have in our country no class of entrepreneurs, or captains of industry, amongst us. We have only a few big technical institutes for the training of men in industries. All our youths are trained in universities, which impart an over-literary education, with scarcely

a touch of the "modern side." Thus our middle-class people usually become schoolmasters, lawyers, and government servants, and seldom business men and technical experts. In order that there may be trained organizers and business men who will be able to utilize scientifically the material resources of the country, we have to organize in our country a system of technical education adjusted to the needs of our industrial life. As long as such a system is not devised, we have to send students for industrial education to Europe, America, and Japan, as we have been doing. To ensure success, students should be required to show industrial aptitude and they should get a first-hand knowledge of small factories in India by personal inspection and tour before they go to foreign countries, and they should be trained only in those industries which have a fair chance of success in the country. Thus, when they return from Europe they will not feel disappointed in the search for employments which cannot be procured. Industries should be in search of men, and not men in search of industries, in the initial stages of a country's industrial career.

It is also essential that they should acquire a thorough practical training by serving as apprentices in workshops and factories of foreign countries so that when they come back to India they possess not only the requisite technical knowledge, but also the practical capacity and business knowledge which are so essential for the entrepreneur. Too frequently business enterprises have failed in India on account of the dissociation of business ability from expert knowledge. If the organizers had acquired sufficient business knowledge along with scientific

skill during their stay in foreign countries, many of our industrial ventures during the last decade would have been successful.

Along with the training of entrepreneurs, we need also as a co-ordinate branch a system of commercial education for training bankers, brokers, correspondents, and commercial agents who act as intermediaries between the producers and the consumers. They will supply business organizers with information about markets where their wares can find a ready sale. It is well known that it is a great disadvantage at present for Indian merchants to depend for such information solely on the agents of European firms, who are often apt to mislead them in the interests of European establishments. If Indian youths cannot immediately overcome the traditional prejudice against manual labour, let them get the requisite education in order to discharge efficiently the services of commercial agents which are now undertaken by Europeans. Such training can well be secured in India, and it therefore appeals to a much larger section of the people, amongst whom there still persists the prejudice against sea-voyage. Again, until technical education is more generally diffused among the people, we cannot expect that our literate classes will devote themselves to industrial enterprises. In the meanwhile they might secure independent livelihood as traders, merchants, and bankers. In the modern world the merchant has become as important if not more so than the manufacturer. It has been observed that the Americans and the Germans are ousting the British out of their markets, not so much by any superiority in the quality of their

goods, but by the superior knowledge of the demands of the markets, by better communication with foreign countries, by establishing regular intelligence departments, and, above all, by possessing and exercising superior commercial knowledge. Thus there is a rich field for the education of Indians in this direction, the importance of which, however, is not fully realized in the country. The vast internal trades of the country are now left solely in the hands of illiterate merchants who have no knowledge of distant markets. They are ignorant of modern methods of advertisement. They are indeed unfit to act as intermediaries in these days when tastes are so continuously varying among the people. Again, the exporting trades are concentrated in the hands of foreigners who gain by far the greatest portion of the profits accruing from them. We want that the brightest of our youths may be able gradually to take their place. They should be able to take a comprehensive view of distant markets, and tell our manufacturers and craftsmen what style of goods is now in demand. They will have to read and understand provincial and imperial trade statistics, agricultural ledgers, and industrial monographs. They will have to inspect personally not only the principal industrial and trade centres of the country, but also the district centres and marts as well, in order to seek out the cheapest sources of supply and the best markets for different commodities. They will ascertain and utilize the cheapest means of transport for such commodities. They will be able to organize sale agencies and mercantile houses, banks as well as joint-stock companies, to appreciate the changes in

the money market, and the fluctuations in export and import figures, to discuss probable crops, and to anticipate the output of manufactured products. Thus, gradually, there will be developed in India a race of traders and merchants, who will lead India in the struggle for commercial predominance among the trading nations of the world.

But these are hopes of the future. The economic problem before us at the present day is this, How we should best utilize the existing technical and commercial education of the middle classes in order to achieve the best possible results. We have to take it that at present technical education is at a low ebb among our people, and that commercial education is almost *nil.* Again, on account of the rarity of modern technical skill, of high business capacity, and of shrewd commercial enterprise, capital in India generally fights shy of industrial concerns, and a large portion of it remains idle and unproductive. When industries have been started in India by the Indians they have often been started with insufficient capital. The effects of insufficient capital are often ruinous. Old and cheap machinery are bought, and thus efficiency is sacrificed to economy. Again, the clamour for good dividends after a short interval also leads to inefficient management when foresight and provision against losses are no longer the guiding principles of industrial establishments.

Under these circumstances our object should be to make the most efficient use of our small capital by finding and training organizers possessing much more than the present low standard of technical skill and business capacity. Our aim should also be

to choose those industries in which success is almost sure: for failures at the beginning of a nation's industrial career create a widespread pessimism which is ruinous to industrial development. Thus instead of attempting all large-scale industries, it is better for the present to organize such industries in which there is a better possibility of success by the utilization of our present resources in labour, capital, and business enterprise. Iron and steel works, glass blowing, textile fabrics, and dyeing, paper-making, alkali works, and the like, are for the most part too big to be generally attempted with our present resources. It is better to take up these industries in some of their under stages. Thus cutlery, nails, door fittings, etc., may be taken up under iron working, utilization of breakages of important crockeries, etc., under glass-blowing; use of improved handlooms of all kinds, extraction of fibres, etc., under textile fabrics; use of aniline and country dyes to produce chintz, coloured cloths, yarns, silk, etc., under dyeing works; paste board and card board works under paper-making; utilization of inflorescent earth such as reh to produce soda, nitre, etc., under alkali making, etc. In this way manufactures of the cruder qualities may be taken up, care being taken not so much for ideal finish at the expense of quantity as for practical utility coupled with cheapness.[1] The quality will have to be the best possible under these two necessary conditions (viz. cheapness and quantity) of

[1] The importance of this principle has been well pointed out in Dr. Radhakumud Mookerji's lecture on "Lines of Indian Industrial Advance" (Industrial Conference, Allahabad), from which I have also derived the above list of industries manufacturing cheap and useful products of cruder quality.

Indian consumption, to which the production must conform. These are therefore the larger industries which afford a rich field for the probable utilization of our present resources in business enterprise and capital.

# CHAPTER IV

## THE INDUSTRIAL PROBLEM OF INDIA—*continued*

### (b) *The Case for the Workshop*

THERE is also a rich field for the utilization of our existing resources in advancing small industries. The small industries comprehend two types of organization, (1) the workshop, (2) the cottage industry. By the side of the industries which are carried on entirely in the cottage by one or more members of the family, or a couple of labourers, there are the industries in which the artisan keeps a small workshop attached to his house and works in it with a few apprentices and labourers. Or else, the artisan has a small workshop, often with hired wheel-power, in which he employs some five to ten artisans, who are paid in wages. The variety of these small workshops is indeed great, and there is no reason to suppose that their number will decrease as factory organization is more developed. On the other hand, it is probable that their number and variety will increase in future.

Even in England, which may be considered to represent the highest development of large-scale production, the number of persons employed in small workshops at the present day continues to be immense. Two hundred and seventy thousand work-people are found employed in small factories having less than fifty and even twenty workers

each, the result being that the very big industries (the factories employing more than one thousand work-people per factory) and the very small ones (having less than ten workers each) employ nearly the same number of operatives. Thus the small industries are as much a distinctive feature of British industry as its few immense factories and iron-works. Has not this fact been too much overlooked even by British economists, as well as by those who seek to adapt their preference for the larger industry to India?

In the continent of Europe the small industries are met with in a much greater variety than in England. In France it has been estimated that while one-half of the population live upon agriculture and one-third upon industry, this third part is equally distributed between the great industry and the small one. More than 99 per cent. of all the industrial establishments in France—that is, 571,940 out of 575,529—have less than 100 workmen each. They give occupation to 2,000,000 persons, and represent an army of 571,978 employers. More than that. The immense majority of that number (568,075 employers) belongs to the category of those who employ less than fifty workmen each. Of these latter 520,000 employers and artisans work for themselves, or with the aid of a member of the family. The following figures have been given by the recent census :—

| | 1896. | 1906. | Increase. |
|---|---|---|---|
| 1. Small establishments (1 workman at most) . . . . . . . . . . . | 290,748 | 317,933 | 9 p.c. |
| 2. Medium-sized establishments (1 to 100 workmen) . . . . . . . . . . | 297,964 | 307,628 | 3 p.c. |
| 3. Large establishments (over 100 workmen) . . . . . . . . . . . . | 3,649 | 4,649 | 28 p.c. |
| | 592,361 | 630,210 | 6 p.c. |

In Germany out of the 14·3 million people who live on industry, full 5·4 million belong to the small industry. Professor W. Sombart, speaking of the small industries in Germany, says—

"It results from the census of 1907 that the losses in the small industries are almost exclusively limited to those home industries which are usually described as the old ones; while the increases belong to the home industries of modern origin."

The statistical data confirm that "at the present time a sort of rejuvenation is going on in the home industries; instead of those of them which are dying out, new ones, almost equal in numbers, are growing up."

Home industries are also widely spread in Italy, Belgium, Austria, and Switzerland. In Switzerland an official census of the industries, made in 1905, gave the figure of 92,162 persons employed in the domestic industries in 70,873 establishments in the following branches: textiles, watches and jewellery, straw-plaiting, clothing and dress, wood-carving, tobacco. They thus represent more than one-fourth (28·5 per cent.) of the 317,027 operatives employed in Switzerland in these same branches, and 15·7 per cent. of all the industrial operatives, who numbered 585,574 in 1905. Thus in England, as on the continent, the small industries are an important factor in the industrial life of the country.

Indeed, the small industry is everywhere extending side by side with the great industry, and the reason is not far to seek. It is an economic necessity. The small industry has always certain

monopoly advantages, on account of which it has lived and will continue to thrive side by side with production on a large scale. As it has been well observed—

"A study of the evolution of industry will reveal the fact not sufficiently recognized that *pari passu* with the development of scientific industries on a large scale, there is always a corresponding development of subsidiary as well as independent smaller industries, including handicrafts, art-industries and home-industries. In fact, it is a fallacy to suppose that natural selection in industrial evolution is only a process of larger organizations surviving and weeding out the smaller; in the struggle for existence in the industrial world, 'fitness' does not depend on size alone, but is determined to a large extent by adaptability to environment and by the conjuncture of circumstances which the organization has to utilize. In this way there is always a place for small industries in the course of industrial development, a place which can never be abolished but will always continue to exist, simply because it cannot be filled by large industries." [1]

It has always to be borne in mind that a factory industry presupposes certain economic conditions which are by no means universally realized. The demand for the goods must be not only wide and large, but steady and continuous as well, otherwise the organization of business will be found unprofitable. Even the big industry has to pass through the small workshop stage before the demand is great enough to make the factory

[1] Dr. Radhakumud Mookerji, "Lines of Indian Industrial Advance."

organization profitable. Thus, when new industries are created, they usually make their start on a small scale, and as the demand increases they gradually come to be conducted on a larger scale. The more active the inventive faculties of the people the greater is the number of these small-scale budding industries. Another condition of factory organization that is presupposed is the growth of capital, not only in the form of machinery but also in the form of means of communication and exchange. Only the improvement in machinery as well as in the mechanical skill necessary to run it can make specialization and organization technically possible, while the railways, telegraph, and the banks widen the markets and make such organization economically possible. Again, another main requirement of the employment of machinery or large business is that the different processes of production shall permit of being carried on simultaneously. Indeed, this feature of industry is almost entirely lacking in what may be called the "culture" industries, agriculture, sericulture, horticulture or pisciculture, which have therefore defied all attempts at minute specialization.[1] It is further doubtful whether the large-scale producers can secure that minute and economical supervision which characterizes the small-scale industry. The

[1] Ely and Wicker, "Elementary Economics." Even here also certain agricultural products have become manufactured products through the laboratory achievements of organic chemistry. Again, the production of quickly perishable commodities is of necessity local and cannot economically be undertaken by machinery. Thus the work of the dairyman, the baker and the butcher cannot be largely aided by machinery except when preservative processes have been discovered or peculiarities of means of transport established.

ownership and control being combined in a single man in case of the small industry, the small producer shows a zeal in the business which is absent in the director of a large establishment. Thus it is sometimes claimed by experts that in many lines of business, a plant of moderate size is the plant of really maximum efficiency in regard to capital and labour costs. The small producer, again, has a distinct advantage in his greater power to know the personal wants of his markets.[1] He is in a far better position to satisfy the individual tastes of the consumers than his greater rival. We have already pointed out in the preceding chapter that perfection of routine work being the special faculty of machine production, machinery cannot undertake the work where fashion fluctuates or the individual taste of the consumer is a potent factor. In many industries this personal element plays so large a part that the small producer will for a long time hold his own even if he cannot oust the large producer from the field. This is especially true of the fine arts and the decorative industries, which are therefore far more suitable to hand-labour than to the machine. Again, even in the region of the ordinary material consumption, the more skilled branches of shoe-making, tailoring and other clothing trades, the individual character of the demand, *i.e.* the element of

[1] "Of two businesses competing in the same trade, that with the larger capital can nearly always buy at the cheaper rate, and can avail itself of many economies in the specialization of skill and machinery, and in other ways which are out of the reach of the smaller business; while the only important special advantage which the latter is likely to have consists of its greater facilities for getting near its customers, and consulting their individual wants" (Marshall, "Principles of Economics," p. 693).

"irregularity"—has limited the use of machinery. A similar cause retains human motor power in certain cases to co-operate with and control machinery, as in the use of the sewing machine. Once suppose that this individuality in consumption is absent, hand-power will be banished from industry. If the wearing public consent to wear clothes conforming to certain common patterns and shapes which are only approximate "fits," machinery can be used to make these clothes; but if every person requires his own taste to be consulted and insists upon an exactitude of fit and conformity to his own special ideas of comfort, the work can no longer be done by machinery, and will require the skill of a craftsman. It is precisely upon this issue that the conflict of hand *v.* machine labour is fought out. Thus as long as the consumers refuse to conform to a common standard, hand-labour cannot be dethroned from industry, and in proportion as they develop individuality of tastes, hand-work or art will play a more important part in industry, repel the further encroachments of machinery, or even drive it out of some of the industrial territory it has annexed. But the highest organization of labour which will apportion machinery to the supply of individual needs and tastes, constantly growing and changing in variety, has not been yet attained in industrial life and organization.

Again, side by side with the independent smaller industries there also grow up many small industries which are more or less subsidiary to the big factories. Such smaller industries are economically indispensable. It is well known that at Sheffield the big factories let out some part of their work to small

masters who work in their homes with their relatives. In the fabrication of clothing also the big firms in important towns or capital cities take the measure and make the cutting, and send out the cloth to be made up, into even remote villages. Professor Marshall has pointed out: "In the clothing trades especially we see the revival of what has been called the 'house industry' which prevailed long ago in the textile industries; that is, the system in which large undertakers give out work to be done in cottages and very small workshops to persons who work alone or with the aid of some members of their family, or who perhaps employ two or three hired assistants. In remote villages in almost every country of England agents of large undertakers come round to give out to the cottagers partially prepared materials for goods of all sorts, but especially clothes such as shirts, collars, and gloves; and take back with them the finished goods. It is, however, in the great capital cities in the world and in other large towns, especially old towns, where there is a great deal of unskilled and unorganized labour, with somewhat low physique and morale, that the system is most fully developed, especially in the clothing trades, which employ two hundred thousand people in London alone, and in the cheap furniture trades." [1]

The evidence given before the "Sweating System Committee" has shown how far the furniture and ready-made clothing palaces and the bazaars of London are mere exhibitions of samples, or markets for the sale of the produce of the small industries. Thousands of sweaters, some of them having their

[1] "Principles of Economics," p. 295.

own workshops, and others merely distributing work to sub-sweaters who distribute it again amidst the destitute, supply those palaces and bazaars with goods made in the slums or in very small workshops. The commerce is centralized in those bazaars not the industry.

The small workshops and the cottage industries may continue to grow and thrive side by side with the large industries, either independently or as subsidiary to them. In our country the variety of the small workshops is best realized in Calcutta, though it is found in all important provincial towns. It is well known that some of the finest work in gold and silver, as well as in wood, is made in small workshops in Calcutta. Brass and bell-metal manufacture is carried on vigorously in workshops in Kansaripara, Chitpur, and Bhawanipur, while the carpentry workshops in Bowbazar have attained a very high standard. Industries like jewellery, the burnishing and enamelling of metals, lithography, bookbinding and stationery, basket-making, making of hats and umbrellas, machine-made lace and mechanical knitting, making of ready-made clothing, and the fabrication of a thousand and one little things in leather, paper, wood, metal, and so on, are carried on successfully in small establishments. As a very small capital is required for the establishment of these industries, they ought to afford an opening for the middle classes who have realized that Government service and the learned professions cannot give employment to all. It is gratifying to note that in Calcutta, except the jute mills and the machinery and engineering works, which are large concerns, the greater number of the smaller

workshops are owned by Indians. Excluding the municipal concerns and works belonging to Government, there are 367 owned by Indians, 179 by Europeans and Anglo-Indians, four by members of both communities, and seven by Chinese. Some branches of industry and manufacture are entirely, or almost entirely, monopolized by the Indian community, *e.g.* they own all, or nearly all, the rope-works, timber-yards, type-foundries, brass-foundries, oil-mills, soap-factories, chemical works, flour-mills, rice-mills, sugar-factories, umbrella-manufactories, surki-factories, etc. They also own the greater number of the iron-foundries and iron and steel works, jute-presses and printing-presses, and have a considerable interest in chemical works, but they have no share in such important concerns as jute-mills, and very little in machinery and engineering works. That our middle classes are having their share in manufacturing enterprise is shown by the following figures :—Altogether, 105, or over a sixth of the various undertakings are controlled by companies, of which only seven have Indians as directors. Among private owners there are 360 Indians to eighty-five Europeans and Anglo-Indians. The castes from which these private owners are mainly drawn are the Kayasthas (sixty-five) and Brahmans (sixty-one), each of them accounting for about one-sixth of the total number, and then, *longo intervallo*, the Telis and Tilis (twenty-eight) and Sadgops (twenty-six). The Kalus come next on the list, having twenty oil-presses, but no other works are in their possession. Though the Shiekhs number over a quarter of a million, only eighteen of them are found in the list of owners, or less than those

shrewd and enterprising up-country merchants, the Marwaris (nineteen). Of indigenous Bengali castes, the Baidyas claim sixteen and the Chasi Kaibartas twelve, but the Subarna Vaniks only ten private owners ; none of them is in this respect on the same level as the Sadgops.

The workshop organization is not restricted to Calcutta alone. It is, indeed, the characteristic feature of our industrial organization in all the larger and important industrial centres throughout the country. The existence of the *karkhana*, or workshop, side by side with the cottage industry in our important industrial centres, however, is not sufficiently recognized.

In Benares, almost all the brocade weavers work in *karkhanas*, or workshops, under the richer members of the weaving class. Again, even in handloom weaving, there exists side by side with the cottage industry the workshop system, in which a prosperous weaver employs a large number of hands, gives them the yarn, and sells the manufactured product. In the woollen industry, though the common type is the cottage, we might often meet with the workshop, in which some twenty to thirty weavers are employed on piece-wages. The workshop system, however, is more general in the case of brass and copper manufacture. Even in the semi-barbarous villages in the Santhal Parganas, the blacksmiths often group themselves into a band of eight or ten men to conduct a workshop conveniently situated under a grove or a shady tree while another man supplies the implements and capital. Indeed, not only the industries mentioned above, but a few others as well, are carried on in

workshops in the larger centres. In the smaller towns and villages, the industries adapt themselves to the family organization, and are carried on in cottages, the workers being chiefly members of the family, though a few unskilled labourers are sometimes employed in addition. But in the large, and especially old, towns the industries are generally in the hands of some richer artisans who have, on account of their wealth, risen in the social scale and become workshop-managers. Poorer and inferior artisans are employed by them in their establishments and are paid according to the skill and nature of their work. The *ostad*, *mistri*, or manager purchases the raw materials and the auxiliary machinery and sells the manufactured products. These small workshops have, under the present circumstances, much greater advantages than the cottage industries in respect especially of credit, the supply of raw materials and touch with the customers. They can effect purchases and sell at wholesale rates, and may adopt more expensive methods and processes of industry.

There is a rich field for the investment of capital for our middle classes in these industries. If the small workshops are controlled by our educated youths who receive commercial training and know the art of business-pushing, they will show much greater vitality and strength than they have now.

Indeed, the middle classes have been shrewd enough to realize this, and the workshops managed by them in Calcutta have already begun to play their part in the industrial life of the country. Not only Calcutta, but all the important provincial

towns in the country afford a very good opening for the establishment of such workshops. Capital in our country is now too small for starting large factories, and it fights shy of joint-stock companies. Let our young men, therefore, collect their own capital, however small that may be, and establish workshops in the important moffusil towns like those which have been established with a small capital in Calcutta. The management of such workshops will be a good training for larger ventures in the way of big factories. Business ability and industrial aptitude will thus gradually be developed amongst the middle classes. Being themselves the owners of their small capital, management will be most efficient under the circumstances. The use of capital on the individual proprietary basis will carry with it something of the magic of property, and will help the growth and accumulation of wealth in the hands of the middle classes, awaiting in their hands the best possible utilization. The workers in the small workshops being drawn from the hereditary craftsmen, their mechanical ability and hereditary skill will be best utilized, and there will be no repetition of those failures of industrial concerns witnessed a few years ago on account of too much reliance being placed on the literate classes or on unskilled labour.

# CHAPTER V

## THE INDUSTRIAL PROBLEM OF INDIA—*continued*

### (c) *The Case for the Cottage Industry*

In the last chapter we have considered the small workshops and the home industries together, and pointed out that they possess some special advantages in certain branches of production as compared with the large industry. In these branches they show a great life-force and are rapidly increasing in number. The cottage industries, again, have some characteristic advantages of their own which the workshops lack and which are particularly true of our country. In the rural tracts of the country the cottage industries are always found going hand in hand with gardening, poultry-farming, etc. Very often the cottage industry becomes a by-occupation to agriculture. The conditions of our agriculture leave the cultivators out of employment for several months in the year, the vast amount of surplus labour being utilized in favour of home industries. Thus during certain months of the year all the cultivators of the villages are turned into basket-makers, rope-makers, and even weavers of coarse cloths. The industry becomes usually the second string in the bow of the agriculturist. Moreover, as the industry is carried on in the midst of the family, the artisans can work longer hours than an operative in a workshop and

factory does. The women also in the interval of their domestic work assist the artisans materially in the easier processes of the industry. The artisan thus finds an energetic support not only in the collaboration of the members of his family, but also in the moral element which is the consequence of the work in his home.

Both the small workshop and the cottage industry have been showing great vitality and making progress throughout the west as the result of the recent developments in applied science and the mechanical arts. If we analyse the respective advantages of both the great and the small industries, we find that the following three factors are in favour of the former :—(1) division of labour and its harmonic organization; (2) economy in the cost of motive power; and (3) the advantages offered for the purchase of raw materials, tools, etc., and the sale of the produce. Of these three factors, the first exists in small industries as well and to the same extent as in the great ones (watch-making, toy-making, and so on); the second is more and more eliminated by the progress achieved in applied science. The recent improvements in applied science place the artisan in a much better position to compete with the big manufacturer than was possible a few years ago.

The modern developments of the use of electricity might now transmit motive power cheaply to the cottage of a small producer. The electric installation is not only less expensive but also relatively more productive than the steam-installation. The economic advantage of the larger over smaller installations is not so great as in the case of steam,

while the absolute productiveness is greater in the case of electricity. Thus the electric installation has no tendency to take large dimensions. The advantage of storing electric energy in batteries is considerable especially to a craftsman whose work is intermittent. Again, the motor can be used even by the most unintelligent. By the inventor's skill, the mere pressing of the button sets it going, while any chance of accident is removed by safety appliances. Again, there have been several petty motors which have proved very successful in the West. The most satisfactory types of them are the water-pressure engines, the gas or oil-engines. The latter have now become the formidable rivals of the steam-engines, and even very large sizes are now tried. It cannot, indeed, be doubted that gas will give steam only a subsidiary place in future. The small petrol engines of motor-cars have great advantage, and they have been improved a great deal. Their peculiarity of having little bulk and proportionately large power has made them useful for a variety of purposes, *e.g.*, lawn-mowers, pleasure-boats, aeroplanes, etc. As regards the respective advantage of oil and gas engines, the relative cost of coal and oil has an important bearing on the question of economy of the two types. The cost of oil-engines is five times that of gas-engines, yet the popularity of the former has been steadily increasing, for reasons such as less consumption of water, less attendance, less risk of breakdowns, less space, less upkeep, less future wastage at starting, and no nuisance of smell, etc. In industries where continual working is needed, gas is more convenient. But in most cases, where the load factor is low, say fifty hours, oil-engines

are much more suitable. The best oil-engines at full load use 4 lbs. of oil per brake horse-power, while the best engines will take about 8 lbs. of coal. These machines can, in the limited sphere of action from 6 to 3 horse-power, contend successfully with the steam engine. Their work is cheap,[1] thus they are the veritable motors of the people carrying with them the germs of complete transformation of the

[1] "If we use the gas in an engine it is possible to get a good economy. The reason is easily seen, when one realizes that the fuel is burnt in the cylinder of a gas engine and not under a boiler, which makes steam to deliver to an engine. In the latter case we have the inefficiency of the furnace and the inefficiency of the boiler, as well as the radiation of the steam pipes and cylinders, items which do not appear in the heat balance sheet of the gas engine. . . . Again, we may use oil as a fuel for firing a boiler or for driving an engine. The efficiency of the oil-engine as compared with the steam-engine is that the one is 34 per cent. as compared with 9 per cent. of the heat value of the fuel" ("The Choice of Power," by Mr. S. T. A. Mills, A.M., I.M.E., *Indian Trade Journal*, May 16, 1912. "Tendencies of Engineering Science," by Adinath Sen, *The Indian Guild of Science and Technology*, p. 63).

Prince Kropotkin has remarked:—

"The number of motors which were exhibited in the Galerie du Travail bear a testimony to the fact that a cheap motor for the small industry is one of the leading problems of the day. Motors weighing 45 lbs., including the boiler, were exhibited in 1899 to answer that want. Small two-horse-power engines, fabricated by the engineers of the Jura (formerly watch-makers) in their small workshops, were at that time another attempt to solve the problem—to say nothing of water, gas, and electrical motors. The transmission of steam-power only to 230 small workshops, which was made by the Société des Immeubles Industrielles, was another attempt in the same direction, and the increasing efforts of the French engineers for finding out the best means of transmitting and subdividing power by means of compressed dynamic cables, and electricity as indicative of the endeavours of the small industry to retain its ground in the face of the competition of the factories."

"Every one knows what an immense progress has been realized since the motors used in motor cars and aeroplanes, and what is achieved now by the transmission of electrical power. But I leave these lines as they were written, as a testimony of the way in which the conquest of air began, and of the part taken in it by the French small industry."

small cottage domestic industries. By adopting such motors, we can give our artisans working in cottages the motive power under fair conditions of economy, practically equivalent to those which secure to the capitalist the steam engine of great power, revive by this means the domestic industry where it exists and re-establish it where it has disappeared.

Thus the progress achieved in the transmission of power and the introduction of cheap motors have tended greatly to the advantage of the home industry.

In France this method of production still continues, and is even on the increase, more particularly in the clothing industry (ready-made clothing, hosiery, gloves, laces, etc.) and in a few others, such as toy-making. And yet the clothing industry is best adapted to the use of machinery, for which, consequently, the factory method is most suitable. Among the factors which explain the obstinate resistance of home industry to absorption by the factory, Professor Gide notes the advantages from the use of a sewing-machine or a small gas or electric motor of a quarter h.p. or less in this branch of production.[1]

As regards the third factor, viz. the advantage of the large industry in the purchase of the raw materials, etc., and the sale of the products, this can also inhere in the small industry as the artisans develop among themselves the spirit of association. In those countries where the small industries are

[1] "Political Economy," p. 174, in which he also refers to the facts quoted in Aftalion's "Le developpement de la fabrique et de l'industrie à domicile dans l'habillment."

showing great vitality, the number of artisans who work single-handed is greatly declining. The following statistics of the small industries of the German Empire bear on this question :—

| | 1881. | 1895. | 1907. |
|---|---|---|---|
| 1. Artisans working single-handed | 1,430,000 | 1,237,000 | 995,000 |
| 2. From 1 to 5 employees . . . | 746,000 | 753,000 | 875,000 |
| 3. From 6 to 50 employees . . . | 85,000 | 139,000 | 187,000 |
| 4. Over 50 employees . . . . | 9,000 | 18,000 | 30,000 |
| | 830,000 | 910,000 | 1,092,000 |
| With the artisans . . . . . | 2,270,000 | 2,147,000 | 2,086,000 |

Kropotkin remarks—

"What appears quite distinctly from the last census is the rapid decrease in the numbers of artisans who work single-handed, mostly without the aid of machinery. Such an individual mode of production by hand is naturally on the decrease, even many artisans resorting now to some sort of motive power, and taking one or two hired aids; but this does not prove in the least that the small industries, carried on with the aid of machinery, should be on the wane. The census of 1907 proves quite the contrary, and all those who have studied it are bound to recognize it."

He then quotes Dr. Zahn—

"Of a pronounced decay of the small establishments in which five or less persons are employed, there is, of course, no sign. Out of the 14·3 million people who live on industry, full 5·4 million belong to the small industry."

Dr. Van der Borght also says—

"It is true that the numbers of artisans working

single-handed have diminished in numbers in most industries; but they still represent two-fifths of industrial establishments, and even more than one-half in several industries. At the same time, the small establishments (having from one to five workers) have increased in numbers, and they contain nearly one-half of all the industrial establishments, and even more than that in several groups."

The isolated artisans and workers are always at the mercy of the wholesale dealers, who bring their wages almost to a starvation level. On the contrary, when there has been an association of the artisans and workers for buying the raw materials and selling the products, the condition of the artisans has greatly improved. Kropotkin has come to the following important conclusions after thorough investigations into the conditions of the small industries in Germany, in France, and in Russia:—

"In an immense number of trades it is not the superiority of the technical organization of the trade in a factory, nor the economies realized in the prime-motor, which militate against the small industry in favour of the factories, but the more advantageous conditions for selling the produce and for buying the raw produce which are at the disposal of big concerns. Wherever this difficulty has been overcome, either by means of association, or in consequence of a market being secured for the sale of the produce, it has always been found—first, that the condition of the workers has immediately improved; and next, that a rapid progress was realized in the technical aspects of the respective industries. New processes were introduced to improve the

produce or to increase the rapidity of its fabrication; new machine tools were invented; or new motors were resorted to; or the trade was reorganized so as to diminish the costs of production."

Again—

"The small industries do not perish because a substantial economy can be realized in the factory production—in many more cases than is usually supposed, the fact is even the reverse—but because the capitalist who establishes a factory emancipates himself from the buyers of his produce and can deal directly with the wholesale buyer and exporter; or else he concentrates in one concern the different stages of fabrication of a given produce. The great concern would thus find its advantages not in such factors as are imposed by the technical necessities of the trade at the time being, but in such factors as could be eliminated by *co-operative organization.*"

Thus the co-operative system will revive the small industries when they are dying and give a new life to those which are at present maintaining themselves with difficulty in the competition with the large industries.

# CHAPTER VI

## CO-OPERATION AND THE COTTAGE INDUSTRY

WE have indicated in the previous chapter that co-operative organization removes many of the economic disadvantages inherent in the small industry. While dealing with the cottage industries we have pointed out the scope for co-operative enterprise in many cases and the possibilities of improvement by co-operative methods. In this article we shall deal with this question more generally and show what a great future lies before our cottage industries if they are carried on by co-operative methods. There are three ways in which co-operation can relieve our artisan classes—

I. Co-operative finance providing the artisans with cheap credit.

II. Co-operation in the purchase of raw materials, tools, and appliances used in handicrafts.

III. Co-operation in the sale of finished goods.

I. Finance.

Wherever our small industries are suffering, the main cause is its want of convenient credit. The poverty of our artisan classes is proverbial, and their poverty is accompanied by great economic disadvantages. Not only are the artisans unable to effect a sale of their wares on account of their poverty, which forbids them to employ travelling agents, or otherwise advertise their wares, but the

very quality of these wares suffers on account of their financial condition. The artisans are not independent workmen. Most of them are hopelessly in debt to the mahajans, and all have to work only to order. These middlemen, who are anxious only for their immediate profits and have no interest in the beauty and excellence of the products, encourage the production of plain utilitarian and cheap work. The artisans, who are at their mercy, have to work solely at their bidding. Under such a system, in which the artisans have to lie idle except when they are paid in advance for their products by these middlemen, and in which they have solely to conform to the ever-varying tastes of those who have ordered them, the art cannot maintain a high standard for long. Craftsmanship is indeed sure to decline when the artisans, on account of their poverty, execute only those things which are most saleable. Workmanship cannot exist when there is a demand for cheap production, only the inferior materials will be produced and art will be sacrificed to utility. The only remedy would be a readjustment of the relations of capital and labour. The task is a difficult one, but it has to be accomplished if we are to hope for any progress. It will be of no use to deprecate the deterioration of our arts, if, by leaving the artisans entirely at the mercy of the mahajans, we compel them to turn out things solely to their order; or to teach them improved processes when the greater part of the profits they themselves cannot reap. Advances of money, tools, or machinery might be made both by the Government as well as by private individuals to deserving and selected artisans.

In continental Europe, the governments of many countries have been developing handicrafts by encouraging the artisans with grants of machinery. Thus the Government of Hungary has for some years been supplying machinery to independent craftsmen (master workmen). Between 1899 and 1909, about 1922 craftsmen were supplied with machines of the aggregate value of 3,762,567 crowns. Only in 48 cases had the machines to be declared forfeited, because the craftsmen in question were unable to use them or keep them permanently working. Out of 1922 craftsmen, 434 work in iron and metal and 390 in the clothing industry. A considerable number of machines has been supplied also to co-operations, 219 cases in all. The measures taken by the state for the development of industry have been remarkably successful, the proportion of failures being a very small one, whether we take manufacturing industry or independent craftsmen.[1]

But self-help in the sphere of industry as well is the best help. Thus the establishment of co-operative credit societies amongst the artisans and the grant of loans from them to the artisans on a co-operative basis will be much more beneficial than grants of loans or machinery from Government.

Germany is the model as well as the parent country for co-operative credit, and it may be instructive to describe how Germany has been tackling the problem of the poverty of the artisan classes. As early as 1850, Herr Schulze, Mayor of Delitzch, founded in Delitzch-Eilenberg his first loan society with ten members, all artisans, and

[1] Alexander de Hollan, *Economic Journal*, March, 1911.

remodelled it two years later as a self-supporting institution with capital and shares. He saw that the lack of convenient credit was at the root of the artisan's helplessness, and that this credit could easily be provided if the artisan by self-help organized himself to obtain it. From that year co-operative credit societies were organized in almost all countries in Europe, with notable success, especially in Germany, Italy, France, Switzerland, and Ireland. Co-operative credit societies are of two kinds, the town credit-bank and the rural credit-bank. The first is predominantly an association of industrial producers: the second entirely an association of agricultural producers. We will deal with the former, basing our description chiefly on the Schulze-Delitzch model. The Raiffeisen bank is suited for agriculturists and villagers, and runs on fundamentally different lines adapted to agricultural needs and conditions of life.

In the Schulze-Delitzch bank, the necessary funds are raised by share capital and unlimited liability. Each member subscribes one share, and where, as is usually the case, liability is unlimited, one share only. The share is fixed as high as possible, *i.e.* as high as it can be without shutting out small industrialists, who have credit needs to satisfy. The object of the large share is twofold, the provision of a working capital and the encouragement of self-help and thrift. The large share as well as the unlimited liability constitutes the main basis on which capital is attracted.

In the Italian town banks the liability of the shareholders is limited. Signor Luzzatti in Italy saw that though rural banks with unlimited liability

was suited to Germany, it was not suitable to Italy, where there were greater extremes of rich and poor who could not be induced to co-operate on a basis of unlimited liability.

The profits of the society are distributed in two parts: one part goes to the reserve fund, and the remainder to the shareholders according to the size of their shares. Deposits in the banks are also encouraged, and they assume various forms. Loans are granted by the banks against four different forms of security: (*a*) the security of one or two friends; (*b*) land mortgage, which is not much offered in banks pre-eminently industrial; (*c*) deposit of collaterals in the form of scrips or valuables; and (*d*) character (no security at all excepting the good name of the borrower). Another way in which loans are advanced is by cash-credit. Credit is also granted by the co-operative bank in the form of a discount of a trade bill of exchange.[1] Banks also lend on invoices, on labour bills, and on a variety of similar instruments common among trading and manufacturing folk, but not generally negotiable except as an act of special consideration and at a high discount. To be able to borrow at ordinary rates of interest constitutes a material convenience to the poor people. Thus, a tradesman having money owing to him from a customer needs but obtain the latter's acknowledgment of the correctness of the debt—provided that the debtor is "good" or can make him so by security—to have the account discounted. It is very common for poor people to buy sewing-machines with money borrowed from a People's Bank, which

[1] Fay, "Co-operation at Home and Abroad."

practice of course they find exceedingly useful; it secures them all the conveniences of the "hire-purchase system" without exacting its extortionate price. It is doubtful if by any method the *banche* have rendered to the humble trading classes and small folk generally more material and more welcome service than by this convenient, popularized banking. Again, banks advance money on any prospective claim sufficiently recognized. The People's Bank of Bergamo has advanced money on cocoons, secured by the undertaking that the spun silk shall not leave the spinner's house till the debt has been repaid. To the small silk growers this has proved a substantial benefit.[1]

The above is a very rough description of the machinery of a town bank chiefly for industrialists. The advantages of such banks are both economic and moral. If we compare the private money-lender with the co-operative banker, the advantage of the latter is at once seen. The resources of the private money-lender are limited, and he cannot control individual borrowers. They are at liberty to make any use of the loan, productive or unproductive. Thus the private banker runs risks of losses, and he recoups himself by charging high rates of interest. In the co-operative bank the borrowers are themselves the lenders. They know and trust one another. Thus the personal security which the small borrowers offer is valued when the other members are satisfied about its genuineness. Hence the rates of interest, charged by the banks, are much lower. Again, the co-operative bank

[1] Wolff, "People's Banks," p. 275.

combines saving with credit. Thus, it fosters thrift among the borrowers. The moral advantages, moreover, far outweigh the economic gains. The bank trains the people in habits of self-help, prudence, and self-discipline. It organizes a democratic community in which the weak by mutual aid and cooperation become strong, and use their strength to lift others out of weakness. It creates a healthy moral atmosphere in the villages, and, as the centre of the intellectual and moral life of the villages, becomes a lever of all kinds of social and educational movements concerning the masses of the people.

There are industrial banks in almost all countries in Europe. But there has been a marked tendency among these banks to deviate from this starting-point, and to lose what is felt to be an essential, the membership of the small producer. In Germany the following table represents the classification of members of Schulze-Delitzch banks by occupation :—

| | 1870. | [illegible] |
|---|---|---|
| 1. Independent agriculturalists | 29·0 | 27·2 |
| 2. Hand-workers | 27·9 | 24·06 |
| 3. Shopkeepers and traders | 8·7 | 9·95 |
| 4. Wage-earners | 11·6 | 13·47 |
| 5. Doctors, chemists | 6·3 | 7·32 |
| 6. Retired persons, etc. | 7·6 | 8·21 |

The percentage of hand-workers follows that of the agriculturists, and shows a little decline. In Belgium the town banks created originally to assist the artisans have gradually lost this feature, and neglect the custom of the small men. In Switzerland, however, the Swiss Popular Bank is very important, having branches over the whole of

Switzerland, and its membership is almost exclusively industrial.[1] The Italian town banks have combated the general tendency towards the neglect of the small man by giving preference to smaller loans, where funds are limited.[2] The tendency towards minimizing the importance of the handworkers as elements in the town banks is the result of the predominance of the factory over the hand-industry throughout the West, and the increase of wage-earners who do not want credit. We have shown in the last chapter that the victory of the big industry is not so universal as is often supposed even in the West. In many industries hand-work has revived, and new industries invariably begin on a small scale in the hands of independent

[1] It should be noted that domestic trades have in Switzerland a much greater extension than in any other country of Europe save Russia. Of the 3,500,000 of the total population in Switzerland, some 100,000 persons are now actively engaged in domestic industries alone, working on their own account or else on that of some among themselves, in 70,873 little establishments, which represent 12·41 of the entire number of establishments of such particular trades. Its service to these industries has thus been indicated by Henry W. Wolff in his "People's Banks": "It has proved a godsend to those small industries with whose workshops the Swiss mountain-side and valleys bristle—watchmakers, makers of musical boxes, weavers, wood-carvers, straw-plaiters, basket-makers, and the like."

[2] The following table represents the classification of members in the Banche Popolari of Italy, on an average of 639 banks:—

| | Per cent. |
|---|---|
| Landed proprietors | 6·56 |
| Small cultivators | 4·12 |
| Rural day labourers | 4·66 |
| Large manufacturers and merchants | 4·77 |
| Small tradesmen and manufacturers | 25·25 |
| Factory hands | 8·11 |
| Civil servants, clerks, teachers, etc. | 18·86 |
| Persons without an occupation | 7·67 |

(Wolff, "People's Banks," p. 314).

The number of small traders, etc., has proportionately declined.

artisans. But, in spite of the relatively inferior position of the small artisans in the modern industrial world of the West, the aid which co-operative banks are still rendering to independent artisans in different countries in Europe is remarkable.

In our country where domestic industries are much more universal than in the West, the establishment of such co-operative banks amongst the artisans is of first necessity. The idea of co-operative credit is taking root in our country; but though the movement is fostered under the beneficent care of the Government, and is fraught with immense possibilities for the regeneration of our indebted peasantry and artisan population, it has not so far been able to affect them to any great extent. The great bulk of the industrial population of the country is almost untouched by it, all the existing Societies of the different provinces being mainly composed of agriculturists. In those industries, particularly where the raw material is expensive, the artisans, if anything, are more than other workers under the thumb of the money-lenders, and will derive the greatest benefit from co-operative credit. Indeed, any hand-workers, by organizing themselves in association, may also obtain credit much more cheaply and conveniently than they now obtain from ordinary money-lenders.

There are, indeed, very few societies of craftsmen in India. Most of them are in the United Provinces. These are small associations of men of the same occupation, and generally of the same caste. Thus there are societies of weavers of cotton, silk, and wool, fruit and vegetable venders, carpenters, leather-dealers, leather-manufacturers,

ekka-drivers, boatmen, etc. The societies have unlimited liability; each member is also required to take up one share payable in monthly or six-monthly instalments. In non-seasonable trades the payments are monthly. Thus in many weavers' societies the value of a share is Rs.9, and the amount of the instalment is only 1 anna, paid every month for twelve years. These weavers' societies have been very successful, and their number is increasing rapidly when once their benefits are understood. In one small town alone (Tanda, in the Fyzabad district) there are twenty societies with 541 weaver members, and a central bank for finance and organization, while another small town (Sandila, in the Hardoi district) has combined with its weaver's credit society a yarn store, which sold last year yarn to the value of Rs.46,000, and paid a bonus of 2 pies in the rupee on purchases.[1] In the Benares silk-weaving industry indigenous co-operative organization has been highly successful.

II. Co-operative Purchase and

III. Co-operative Sale.

As the co-operative bank supplies the artisans with money, the co-operative supply society supplies them with tools, appliances, as well as the raw materials required in the crafts. Similarly the sale society takes produce from the independent artisans and sells it in its original form. In Germany these associations of small producers are called Handwerkgenossenschaften. They buy raw materials in common, use machines in common, sell their products in common. The commodities

[1] "Co-operation in India," a paper read before the East Indian Association by S. J. Fremantle.

raised belong to individuals. In our country the artisans purchase the raw materials as well as tools and appliances singly. The shopkeepers or middlemen from whom they make these purchases very often deceive them. Again, expenses of transport are also charged, which make the prices heavy, especially where the purchases are small, and the distance from the town is great, which are usually the case. If the artisans unite together and their individual requirements grouped together are ordered in bulk, the advantages of such purchase will be obvious: (*a*) the supplies can be bought cheaper, as the purchases are wholesale; (*b*) the freights are lower; (*c*) the supplies are of good quality. Again, costly machinery, like oil- and gas-engines, which individual artisans cannot and will not buy, might be purchased in common by the society and hired out to the artisans. Thus various kinds of machinery which the artisans cannot use otherwise might be made cheaply accessible to them. The co-operative society will not only bring the artisans cheaper supplies; it will also teach them how to use them. The co-operative society commands confidence from the artisans, and new tools and implements might easily be introduced through the co-operative organization. The advantages of co-operative organization are so great that a number of small trades, artisan works, and domestic industries in Europe has revived by this means, and recent economists anticipate a revival of the small industry, if co-operative methods become universal, in spite of the competition with the big industry. Thus Professor Gide has remarked—"Co-operative association — under the different

forms of productive association, societies for the purchase of raw materials or for the sale of finished goods, or societies for mutual credit, aided by mechanical inventions that are substituting electric power for steam, and enabling us to transport motive power from the place of its generation to the place of its application, will permit new forms of industrial enterprise capable of resisting successfully the encroachments of large-scale industry." Co-operative societies possessing their own machines, oil- and gas-engines, and providing electric light and power for the artisans (by the employment of a rapid in the river as motive force) will secure the same economies of production and opportunities as to invention and improvement of processes and utilization of work which regularly inhere in the large-scale industry.

In connection with the working of industrial credit societies as well as societies for the common purchase of raw material or for common sale, certain difficulties have arisen. It might be profitable to indicate how these difficulties have been overcome in the West, notably in Germany.

Credit societies for special trades and industries have usually failed in Europe. The idea of forming special credit societies for certain industries has been abandoned. An industrial credit society now comprises the most diverse elements of self-dependent industry, so that all may find in the credit society a ready support.

Co-operative credit societies have now found a secure basis for granting loans in the acceptance of outstanding or recently incurred claims, upon safe debtors, which the borrower transfers to the society.

In simple business dealings amongst artisans this form of security, however, cannot often be used because there is the danger of offending a customer by transferring the claim. It may be assumed as a fact that a well-managed credit society can meet all reasonable applications for credit made by its members.

In the case of societies for the common purchase of raw material or for common sale, a combination of the various groups of artisans is advisable or rather essential. The industrial co-operative society is often led to fix the price of raw material, the use of machines, etc., considerably below current prices. But the duty of such a society should be to make it possible for the artisan to perfect his trade and to modernize it on good commercial lines. If the price of raw material, semi-manufactured articles, and the use of machines is fixed under current prices, experience has shown that the resultant economies are not to the advantage of the workers, but to that of the customers. This important point, however, is frequently misunderstood. Another great danger of the supply societies lies in allowing too extended credit. It is a matter for serious consideration when artisans get machines on credit whose full employment in the undertaking is not assured.

As regards the common sale societies, it is, of course, self-evident that they can only be of service in industries which can manufacture for stocking. The area of utility of a common sale society is, from the nature of things, very limited. On this account such societies have to exercise great caution in admitting new members. In these sale societies the warehoused goods are not regarded as specie, but

rather as industrial produce, the value of which is often decided by the special circumstances and wishes of the purchaser. Whether the associated sale societies should accept the products brought to them on their own account or whether they shall only exhibit them and sell them on account of another is a question that has to be decided on the merits of cases as they arise. Products whose value is largely a question of public taste, should not be purchased by a society. It has been found practicable to hire things which have come into a selling society's possession. But here, too, the utmost caution is essential. Specialized knowledge on the part of the manager is essential if the society is not to suffer loss.[1] The advantages of organizing co-operative sale-societies for the marketing and sale of the finished products of the artisans are also obvious. The artisans who live isolated from the market and from one another have a very imperfect knowledge of the special needs of the consumer. Their contact with the consumer is also very frequently obstructed by the interposition of middlemen. The co-operative sale society not only intercepts the profits of the middlemen, but it advertises the wares effectively and sells them conveniently in the interests of the artisans.

Not only the co-operative banks, but also the co-operative supply and co-operative sale societies will revolutionize the condition of our artisan classes if they are introduced in India with due precautions necessitated by experience in the West. There are

[1] *Vide* the paper on "Credit and Industrial Co-operation," read before the International Co-operative Congress at Hamburg, 1910, by M. C. Korthaus, Berlin, Director of the Principal Union of German Industrial Co-operative Societies.

certain special circumstances which distinctly favour the introduction of industrial co-operation amongst our artisans. Our industrial population is organized into castes, marked by a spirit of association, solidarity, and co-operation in social dealings. The caste traditions and the character of the people are thus distinctly favourable to co-operation for industrial purposes. Again, the form of industrial co-operation, though very recent in Europe, is structurally akin to the economic methods of our village community. In the village community, the village industrials are paid by the villagers, and the communal ownership of land, typical in the Indian village community, links itself naturally to the communal ownership of machinery and the implements of production, as well as of the marketable wares, which is the object of industrial co-operation. Indeed, there are the seeds in the Indian soil. The co-operator's labour and cultivation are required in order that this soil may yield a harvest possibly more abundant than that of the West.

# CHAPTER VII

## TECHNICAL EDUCATION AND THE COTTAGE INDUSTRY

ONE of the important causes of the decline of our cottage industries is the inadequate industrial education of our craftsmen. The caste, indeed, provide an excellent system of training them at the minimum of cost, but the system has to be improved to meet the present requirements of industry. In the existing system of industrial education, the boy learns the rudiments of his craft from the family members at a very early age. When he is five or six years old, he is apprenticed at the shop of his father or of a caste relation and acts as his menial servant to begin with. He cleans the tools, supplies them to the master workmen while they are at work and thus gradually knows their names and begins to understand their use. He is then given the rougher and the elementary portions of the craft and gradually becomes useful to the master. At this stage he gets a stipend which rises from Re.1 to Rs.10 per month according to his ability. As he advances in knowledge he is given the finer portions of the craft till he becomes a skilled artisan and chalks out his career independently.

The masters seek to develop in the pupils character, professional and general aptitude for their

work, and efficiency and skill receive ample recognition in the shape of the increased amount of the stipend. The secrets of the trade are in the air of the household and are imbibed by the apprentice according to his receptive capacity. Thus the admirably vitalized teaching tends to train a class of skilled workmen and conscientious artisans which, adding to the wealth and well-being of the people, hands down to posterity the hereditary knowledge of the craft accumulated for centuries.[1] But the indigenous system labours under one great short-coming,—the apprentice gets no liberal education. There is a pitiable lack even of the most ordinary education in the vast majority of those who ply their crafts in workshops. Imitation and not training being the principle, the pupil cannot be more skilful than the master, so the art soon becomes stereotyped. In fact, the same uniform and uninteresting patterns are often reproduced and handicraft is degraded to the level of manufacture. Again, competition being restricted only to the same castemen, the stimulus for improvement is to a certain extent removed. The

[1] It is acknowledged by industrial experts that social heredity is of immeasurable value in the maintenance of high excellence in the practice of the artistic industries, or the applied arts generally. With regard to our artisans, Sir G. Birdwood has remarked, heredity is the secret of the Hindu's excellence in the industrial arts ; and when you praise a goldsmith, or wood- or stone-carver, or weaver, or potter for his work, he would reply that he was but handing down the ever accumulating merit of his forefathers through nearly three thousand years past to his children and children's children, and he prayed it might so accumulate through them for yet three thousand years to come. Such facts should not be overlooked when considering the pressing problem of technical education in every department of industrial activity and enterprise throughout the United Kingdom (Sir G. Birdwood, in *Journal of the Royal Society of Arts*, 1911).

isolation of the craft tends to narrowness and consequent stagnation. The artisans adhere too closely to a few old patterns and seldom adopt new implements or new methods of manufacture.

It is well-known that a very large proportion of the things turned out by our craftsmen are made by methods that should be obsolete and with old and very defective tools. All this reduces the profits of the craftsman and prevents him from spending what he ought to do on new tools and appliances. Worse than this, he has now too often not learned his craft properly and has too little of the mechanical resource and dexterity of his equals in Europe. Thus the brass founder sticks to his traditional Indian ways by means of which he makes good single castings while his rival with just the same amount of preparatory work turns out twelve. The Indian cleans his cardings by hand; the European puts them in an iron box and makes them clean each other, and finally the European deals with them in clusters on a machine or grinds them to shape with emery or other wheels, while the Indian laboriously finishes them singly with a blunt file and a hand burnisher. All this has to be remedied by a well-organized system of education.

It would not do, however, if we merely imitate the methods of the West, for they have their characteristic defects. There are two methods of industrial instruction which now prevail in Europe, viz. the workshop and the school method. The former emphasizes trade interests. The apprentices and artisans get their art and technical lessons in and through work. Great attention is paid that the commodities are saleable: art-considerations are

often neglected to make the commodities marketable and cheap. Thus the workshop method hampers the growth of those industries in which the beauty of product rather than the utility is sought for, it will be found to be decidedly inferior to the indigenous method where patience and æsthetic perception are more valuable than cleverness and utility. Indeed, the popular art—the art of the people, hand in hand with every handicraft inseparable from life and use, the spontaneous art of the cottage artisans will be altogether crushed out of existence if the workshop method of industrial education is introduced. Already the workshop method has been discredited in Europe and preference is shown to the school of art.

The school of art attaches no importance to commercial interests. It seeks to diffuse art education among the artisans and considers that the mere teaching of art will be sufficient to make their handiwork artistic. As a result of this the artisans become mere receptacles of some abstract ideas and cannot utilize them in their everyday work.

In many cases they cannot work on their own account and thus become almost useless so far as their trade is concerned. They may become good hack designers, but never artists. "Whatever the cause, there seems no doubt that at the present time comparatively little attention is being paid by the schools to design for manufacture. Until some years ago the artistic crafts had been neglected; now, they are not only considered, but they take the first place. It is a pity, not indeed that students should design for the crafts, but a greater number of both teachers and taught do not

realize how necessary it is that design for manufacture should be our consideration. It is wrong to ignore the artistic possibilities of the more ordinary objects. It would surely be a higher aim to try to make manufacture artistic as far as may be than it is to turn one's back on it or stand aloof in proud superiority."

Many of the continental schools have striven to attain the two objects together. The apprentice turns out the goods themselves and learns the processes of manufacture necessary to guide them in connection with the designs. He understands the limitations of his design which are necessary for its adaptation to his own handiwork, and thus the more effective co-operation between the design and the work, the ideal and the real, is secured. The teaching of art thus goes hand in hand with the proper teaching of a trade. The art flourishes all the more healthily from the fact that the student looks upon it as part of the necessary working equipments for his trade and has not much temptation to consider his immature efforts at design or adoption in the light of artistic achievement. The continental system reaches its perfection in the School of Industrial Arts, Geneva, which is "setting a great and salutary example to Europe, giving a new life to art and a new tone to that life throughout the world. The students in this school are practically apprentices, paying no premium, receiving no remuneration, and turning out excellent work under the direction of experts. All materials —such as marble, gold, silver—are supplied free; the articles produced become the property of the school and their sale is a source of revenue. A

pupil of talent is even assisted in his living expenses, so that he may not be hindered on the road to success by extraneous worries. The conditions differ entirely from those which obtain in our English Schools of Arts. There is no preponderance of immature learners acting as a drag on the class work, no attendance merely to pass the time; the single endeavour is to teach and to learn some art trade in the most perfect manner. Complete and saleable work is insisted upon in every department, nothing sketchy and unfinished is allowed to pass; every trained student can command his price in the market, and on leaving the school can immediately command a fair salary."[1]

Thus in the School of Industrial Arts, Geneva, the defect of the Indian apprentice system is removed by insisting that pupils must have passed the primary schools in order to qualify for entry. Theoretical lessons are also imparted in the school. The school for teaching decorative art directs special attention to theoretical work; the school of industrial art devotes itself exclusively to the practical side, but does not allow pupils to neglect those studies in design, modelling and composition which are indispensable for the successful practical pursuit of any artistic craft. Thus when a pupil has selected a craft—enamelling for example—he must study several subjects which will bear upon it from an artistic point of view. At the finish of his time he is an artist, and is looked upon by employers as better than one who has been apprenticed in a workshop. Evening classes are also held for artisans, who cannot attend instruction

[1] *Journal of the Royal Society of Arts*, 1911.

in the day time at which instruction is given in freehand drawing. Geometry, modelling, drawing, with short lectures on the history and development of art; finally designing and painting enter into the curriculum in addition to the ordinary course of technical education and practical work in evening classes. The aim has been to direct the pupils to consider wherein beauty consists, and to encourage their individual artistic expression of it. Drawing is thus the basis from which the edifice is reared; art training begins with the lessons in drawing.

The Indian system ought to adopt these principles of industrial education and organize instruction in drawing and designing on a large scale and on a serious footing as its fundamental basis. It is high time that we should endeavour to improve the artistic education of our young apprentices by adopting the Western system of teaching which will cultivate the taste for beauty and diffuse sound knowledge of its rules. Again the artisans have to be lifted out of their narrow groove and their natural horizon improved if they are to produce fine work. With the lessons on drawing and designing, following the traditions of Indian art and craftsmanship, arrangement has also to be made for imparting such general education as will enlarge the mental vision of the artisan while preventing him from falling into a clerical groove. The handicraft side of training should not also be neglected. In order to encourage industries, the institutions for industrial instruction must make it their concern to promote industrial and artistic activity not alone by theory but chiefly in a practical direction.

This would strengthen the intimate connection between trade and educational interests which characterizes our industrial life. It would reinforce most of the dying art industries by giving them fresh life, through the adoption of the modern methods or organization and of systematic teaching of the trade. The old organization will be redeemed and purified and be more efficient for the long-known uses of its own evolution.

# CHAPTER VIII

## THE RESTORATION OF THE VILLAGE

No scheme for the resuscitation of the small industries is complete unless it includes measures for the improvement of village life. Whether in India or in the West the decline of the small industries goes on *pari passu* with the decline of small-scale farming. On the other hand, in countries where the number of small proprietors multiplies small industries grow and develop. In England the destruction of the home-industries is more due to the rural exodus and agricultural decline than to any other causes. On the other hand, the prosperous and energetic agriculture in France has been a support to the village industries. The number of small cultivators in France turn to various small industries in addition to agriculture as supplementary sources of living. Thus small industries in France represent a valuable characteristic feature of the economic organization. Indeed any steps taken towards the improvement of agriculture of assuring the peasant's rights on the land, or for creating an intellectual life in the village, will always tend to promote the growth of the small industries.

One of the most important economic problems of India is the decline of the village. Unhappily

this problem has not sufficiently attracted the attention of the educated Indians. And yet India is the land where the village and not the city has been the centre of civilization in the past. In India more than in any other country the great intellectual, social, and religious movements have originated in villages, and, nurtured by their thoughts and aspirations, at last reached the cities. The soul of India is to be found in the village, not in the city. In modern Europe, on the other hand, the discoveries in intellectual or social life are made in the city and are then communicated to the village, which receive them as gospel truths. The city sets the example. The village imitates. The city in the West controls all the springs of social life. The village has no separate social life of its own. The city has its own fads, crazes and "isms," and these are accepted by the whole country at large. The tastes and fashions of the village are regarded as idiosyncrasies, and therefore checked. Thus every trace of individuality of the village, every local peculiarity of life and thought are destroyed. Village arts and industries, village customs and ceremonies, village pleasures and amusements, village dialects and folk-lore, popular tales and songs,—all these which tend to give expression to the individuality and the peculiar temperament of the village are all discarded. Village habits of life go out of fashion. The village loses its individuality, its soul. The note of village life is drowned amidst the loud echoes from the city.

When one phase of social life tends to control the other phases, civilization is in danger; for life implies variety, and culture consists in the blending

of diverse types. If one type predominates, and the other types are not developed, culture declines. This has been the result of what Professor Royce calls "the bleaching process" in the West. There the characteristic habits of life and thought of the village are now being superseded by urban ways. Life in the village tends to correspond to the life in the city. Instead of diversity a dull uniformity devoid of life is attacking society. Society, instead of being enriched by a homogeneous blending of diverse types, is developing a single type. The approximation towards a single type is sapping the roots of life and culture. Thus Society is becoming all the poorer.

The questions that present themselves to an Indian sociologist in this connection are these. What should be the relation between the city and the village? What are their respective lines of development? The West in its mad exaggeration of the division of labour has created a distinction in type between rural and urban life. The village produces the food of the nation and all the raw materials of industry. The city manufactures in its factories and sells the finished product in its shops. The village gives birth to population and energy. The city uses the raw materials of social life; the village is a field for exploitation. Rural life has no separate existence of its own, its existence is for the city. The modern industrial and social ideal is to suck out everything that is best from the village into the city. As in the system of production the worker is a mere servant to machinery, so in the system of social organization the village has submitted itself to be a slave of the city. An

undue division of functions has thus been established in Western society. It is not good for a man to be riveted for all his life to a given spot for making "the eighteenth part of a pin." It is not also good for the village to be specialized permanently. There has been an increase of urban gains as the result of the division of functions between city and village. But true efficiency, culture, and well-being are sacrificed.

The village, like the city, should live a life of its own. The village should be a living, self-conscious part in the social organization, a partner with the city in the highest enjoyments of art and science, of creation and use. Technical knowledge and industrial commercial organizing capacities should not be the monoply of the townsmen. Each village must cultivate scientific knowledge, together with the knowledge of agriculture. It should develop industrial aptitudes, together with the patience and assiduity required in the work in the field. Thus some manufacture or industrial art should be combined with agriculture in order that the rural economic organization, while creating wealth for the community may also develop the industrial qualities which it really needs. In the industrial world of the West the disparity of wealth and technical skill between town and village is striking. There is a superabundance of capital and mechanical skill in the town; while the village suffers for want of capital and business knowledge. The city almost monopolizes science and enterprise; the village is backward because of the ignorance and lack of enterprise of the people. Such are the inevitable results of a too rigid adherence to the

principle of division of labour. It is not to the interests of culture that the village should permanently be the hewer of wood and the drawer of water for the city.

In the system of production, the permanent division of functions between producers and consumers, and amongst the former between capitalists and labourers, has led to grave social evils. A protest against this has given birth to socialism. Socialism aims to establish the integration of functions. In the socialistic order the watchword is not division but integration of labour. Differentiation has been the watchword of orthodox economics. Socialism proclaims combination. In the socialist state the consumers are their own producers, themselves jointly owning the means of production. Thus socialism abolishes the orthodox division of people into well-defined classes or new "castes," such as producers and consumers, labourers and capitalists. Industrial co-operation, again, is a step in the process of integration inasmuch as it effaces the distinction between labourers and employing capitalists. Distributive co-operation is a further step in the same process. It affords the basis for organizing distribution and production with labourers working under the control of the consuming members. Not only socialism but co-operation as well will profoundly affect the present industrial system based on the principle of divison of labour. They will usher in a new industrial organization whose watchword will be integration of labour. Both the social organization and the industrial system of the West represents the second stage in the process of evolution. From

homogeneity the progress has been towards differentiation. Integration will represent the final term of the progression. In industry, after a period of an ever-increasing division and sub-division of functions, the tendency towards a synthesis is apparent nowadays in socialism, as well as distributive and industrial co-operation. In the social organization also, the same tendency is manifest in the growing interest in village life, a fuller appreciation of the immense value of agriculture and village industries, the arts and crafts movement and co-operative work. In cities the tendency of bringing the factories to the villages, which has found expression in the "Garden Cities" movement, is also significant, representing another phase of the integration process. In future the rigid differentiation of functions between city and village will be checked. Science and art, mechanical skill and business enterprise, will not be confined to the city. Industrial arts and handicrafts will flourish in the village side by side with agriculture. Industries in the city will not have to be fed by hands taken from agriculture in the village. The countryside will utilize the labours of engineers and inventors. Knowledge and capital will be distributed throughout the country.

As the process of integration in the industrial system represented in socialism and co-operation removes the unequal distribution of wealth among producers and consumers, integration in the social organization represented in rural movements will abate the disparity of wealth and culture between city and village.

In India the differentiation between city and

village life was not sharp. Here the unit was and to a great extent is still the family, sociologically speaking, and the land territorially. Our industrial structure rests on the family and land basis. Thus India's economic unit has been the family of small cultivators. India is the land of small holdings. The joint family, the system of land tenure and the law of inheritance have all combined to make our country essentially the land of small tenantry. Here the land is not left in the hands of great landowners, who are often more busy with their shooting preserves than with their tenants' holdings. The small cultivators here enjoy the land and the fruits thereof. The proprietary instinct of the individual in India, again, is much weaker than in the West. Its aggressive character has been tempered by our law and social institutions. In fact, the Roman Jurisprudence, by its emphasis on private property and by its law of the sacredness of creditors' rights over and against debtors, and the Gothic and Frankish customaries, by the feudal organization of land tenure, have given a disproportionate importance to the proprietary instinct; indeed, in some ways, a wrong direction to the development of Western nations and states. India, therefore, has not yet experienced to the same degree the evils of the disparity of wealth and property. The repression of the proprietary instinct and the communistic sense as well as the basal facts of our family and social life have checked the concentration of capital in fewer hands. Industry, therefore, has not been highly specialized. The factory has not developed. Agriculture has been more important than manufacture, in

agriculture the small peasant proprietor is more important than the landowner and cottage industries supported by agriculture have flourished. Where the ideal of "specialization," "centralization," and "concentration" does not dominate industry, we have not to witness the unfortunate spectacle of rich pampered cities, the seats of prosperous manufacture side by side with deserted villages "where men decay." In India villages like cities have been the repositories of knowledge and wealth, of science and technics. City and village have progressed on nearly the same lines. There has been no difference of type between city and village. Both have lived and progressed by mutual aid and association.

But a profound change has now affected the Indian village. The Indian village is no longer full of life and vigour, supported by an energetic agriculture. It is fast becoming a scene of dreariness and desolation, while the city is being congested with the influx of population from the village. Life and progress are manifest only in the city. Capital, mechanical skill and knowledge are monopolized by the city, the village is suffering from dearth of knowledge and skill. The impact with the Western civilization has raised the standard of consumption of all classes of society: but productive activity has not increased in proportion. A system of over-literary education introduced into the country with a view to satisfy administrative needs has created, on the other hand, a dislike for manual labour, handicraft or trade. The middle classes are flocking into the government service, or any sort of clerical or semi-intellectual occupation.

There has been engendered a feeling of contempt for manual labourers, whether skilled or unskilled, and a demarcation of social feeling which does not correspond to differences in wages. For the rate of pay of the middle classes is very often little different from that of the skilled labouring class. In India specialized skill and general mechanical ability are in constantly growing demand as manufactures are being developed; while the constant or ever-increasing stream of the middle class which aims at the clerical occupation is gradually lowering the rate of pay of this class. Unfortunately the prejudice that manual labour is degrading to it is very strong, and in consequence those who had previously remained in the village managing and directing its agriculture, industry or trade are now leaving the village in large numbers in search of intellectual occupations in the town. More than any other cause, the migration of this class has created the unfortunate contrast between the stagnation and decline of the village with the life and progress of the city. For it was this middle class which guided and controlled the social and intellectual life of the village peasantry. When they have gone there are none to look after the common interests of the villagers.

The common pasture land is wrested by the landlord from the hands of the villages, and there are none to protest. The village money and grain lending trade is transferred from the hands of local people to those of outsiders, Kabulis, baparies or middlemen, who are agents of big European exporting firms. These come gradually to control the distribution of food grains. Their sale of crops to outside markets

is guided by no reference to the interests of villagers. The rates of interest are often exorbitant and the relations between debtor and creditor which were formerly based on status now rest on a competitive basis. Food crops are exported from the village even if a famine be imminent or actually raging in it. Thus the village industry is exploited by outsiders when the middle class has left the village to look for their own prospects in the city. The peasantry instead of growing food grains are encouraged by payments in advance from merchants and middlemen to grow raw materials for export, and are thus left without any reserve of grain to tide over periods of scarcity or famine. Not only is industry now diverted from its natural course of conducing to the welfare of the village, but its intellectual and social life also are now jeopardized on account of the migration of the flower of the rural population to the city. The communal gathering in the hall of the village temple has declined in importance and strength for want of patronage and support. Perhaps the villagers used to meet previously in the audience hall of a rich magnate; his building is now deserted and has become a haunted house where owls and pigeons live together. The recitation of the Ramayana, the Mahabharata, the Bhagabata and the Chandi, which was usual every evening in the village hall, has to be discontinued for want of funds. The *Yatra*, or musical play, which along with the *sankirton*, or singing of God's praise, and the *kathakata*, or story telling, played such an important part in educating the masses, has also declined due to want of patronage. There was a time when even

the *Yatra* or the *Kabigan* or popular songs uniformly reflected the principal trends and tendencies of the thoughts and aspirations of our people. But they are losing touch with the national life. Cowherds and confectioners, boatmen and fishermen, common peasants and artisans thought so deeply and sang so well that they drew, evening after evening, crowds more enormous than which now gather around the modern stage. These men were unlettered, yet it would be a sin to call them uneducated. These plays and songs have now degenerated both in form and in spirit. The character of a play or a song depends to a very great extent on the character of the audience. When the upper middle class has left the village and lost any interest in musical plays and parties, the musicians and actors have depended on the support of the populace. The withdrawal of the patronage of the middle class and of its moral influence has forced to lower the standard of the plays and songs. Their subjects also are becoming more and more of village interest as the middle class ceases to have social intercourse with village playwrights. Again, the village *Kathakata*, or story-telling, which is the traditional vehicle of popular instruction, has also fallen into neglect; yet it goes without saying that popular education is better imparted by means of oral lessons than otherwise. The *kathak*, or the village story-teller, is adept in the art of public speaking, and the songs which are interspersed between his lively discourse have a very impressive effect on the village audience. This excellent method of popular education is now almost extinct for want of patronage. Nor can we over-estimate

the evil effects of the migration of the middle class on the social life of the village. There was in every village an arbitration court conducted by men of leading in the village which decided petty quarrels and disputes and even contributed very largely to promote amity and fellow-feeling among the villagers. The arbitration court has been dissolved as the influential persons have left the village and party feeling and animosity have become rife in the village. The spirit of association and fellow-feeling which characterized our village population is disappearing. Large sums are now squandered away to fight law-suits which could easily have been decided by the arbitration court. Again, village institutions which were previously supported by village funds and labour are decaying. Village temples are without repairs, *sankirton* or musical parties have become irregular in their sittings. Rivers have silted up and weeds have grown thick on them. No new tanks or wells are dug, and good drinking water is scarce. Cattle die by hundreds and cholera rages as an epidemic even in the hot season. Schools have been closed.. The householder's habit of setting apart a handful of alms every day to defray the cost of a school or a religious festival is being discontinued. The middle class has left the village for good, and there are none to teach the value of self-help and co-operation, and to fight against mutual distrust and apathy. Those who keenly looked after the welfare of every villager, shared their joy with him on a merry occasion and consoled him in his sorrow, whom every villager regarded with a feeling both of awe and reverence, are now gone for ever. To

whom shall the villager now turn in his need? Who will now tide him over his bad times by giving him a loan free of any interest, or give him an employment when he wants such? From whom shall they seek consolation in sickness, or in despondency, who will be their refuge in a great bereavement? Who will look after the aged widow, the solitary grandfather or the helpless orphan? Who will administer medicine and tend the sick with the most assiduous care however humble they may be? Who will arrange *sankirton* parties, lead them round the village during an epidemic and give peace to the panic-stricken people? Who will conduct the village religious festival and feed the poor and the forlorn, having always a kind word for each? "Who will help the man with the hoe, bowed by the weight of centuries he leans, the emptiness of Ages in his face, and on his back the burden of the world?" Who will exchange smilingly a few encouraging words with the careworn peasant heavily in debt as he plods his weary way homeward after a hard day's work? And again, who will act as the censor of the village, punishing moral delinquencies, omissions of duty towards the family or the caste? Who will insist on the performance of social duties by example and by precept, lead the villagers to build or repair a thoroughfare, or an embankment, or improve the course of a river that has silted up? Who will look after the drainage and irrigation of the village, prevent malaria, or check the spread of an epidemic by taking wise precautionary measures beforehand? And who will see that no villager commits any

indiscretion that might endanger the health of the whole village?

The middle class, indeed, was the repository of the people's confidence. It was this class which led them, initiated their movements, and taught them to work for common objects. They undertook the noble task of helping the people to help themselves, and they achieved their object. Real leaders of the people as they were, they did not check the initiative and independence of the people, but encouraged free activities. Smiles has said, "the highest patriotism and philanthropy consist not so much in altering laws and modifying institutions as in helping and stimulating men to devote and improve themselves by their own free and independent individual action." Thus the middle-class performed the noble mission of elevating the social and intellectual condition of the villagers.

And the middle class was not unproductive. It was this class which planned and directed the work in the field, managed and organized the rural trade, and to a great extent financed village agriculture and industries. In fact it formed the very backbone of the agricultural community. But the work of directing rural agriculture, trade, and industry has now ceased to have any attraction for it. The ideas and ideals of Western life, which are not altogether conducive to our social well-being, have created a profound revolution in the minds of the middle class. The standard of consumption has certainly been raised, and none have waited to consider whether the rise in the standard in imitation of the West implies an increase of

culture and well-being or not. The pleasures of town-life have been too fascinating. Men prefer semi-starvation in the town to a competent living in the village. The cost of living in the city is more than twice that in the village. Still, a position in the city with no prospects, and a pay hardly sufficient to defray the expenses of a single individual is more alluring, and the paternal property and orchards are all neglected. The joint family system is broken up, and the individualistic system of the West is adopted. The small earnings of clerks, railway officials, book-keepers, and the like cannot be shared by all the members of the family. Thus the family is becoming individualistic. The individualism of the West at its best has been a stimulus to productive activity, and a nurse of manliness, initiative, and enterprise, virtues which are so conducive to the industrial success of a nation. The individualism of India is becoming too much a mask of selfishness, a desire to shirk the responsibilities of the joint family life in order to enjoy selfishly the pleasures and luxuries of the city. It has not created any new independent careers of livelihood; it rests on service of the government, and it has diminished productive activity. Not deriving its strength from productive enterprise, our individualism is not only militating against our joint family, but threatening family life itself to a grave extent. In the chief cities people flock in large numbers for service and employment, and they annually leave their families in native villages. In the whole population of Calcutta there are only half as many women as men. This is due to the large number of immigrants, among whom there

are only 279 females to 1000 males; the majority of these are temporary settlers, who leave their families at home. Another result of the large volume of immigration is that 44 per cent. of the entire population are male adults, which is double the proportion for the whole of Bengal. It is unquestionable that the disproportionate excess of adult males over females is one of the causes of city vice and immorality; and Calcutta is not free from this grave, social evil.

Such are in general the effects of the immigration of the middle class on our villages, and also on our life and activities. People speak of the "drain" to England; few, however, dwell on the economic effects of the drain of all skill, enterprise, knowledge, and wealth, from the village to the city. The drain from the village to the city has paralyzed all economic activities in the village, and has diverted the enterprise of the middle class to an unfruitful channel. Our cities have grown enormously, but they are becoming too much mere excrescences on our body politic, the character of which is still essentially agricultural. In the city, though the middle class is gradually coming to participate in its trade and manufacture, yet the number of persons that is engaged in government service, professions, and in lower intellectual occupations is unfortunately quite disproportionate. In the village, agriculture is declining, and agriculturists are becoming day labourers. Our peasants are unfit for strenuous and sustained work in the factory. In Bengal and Madras, which are the most prosperous provinces, the factory hands have to be recruited from elsewhere. Thus the factory industries

of the province do not offer means of livelihood for local peasants. They therefore migrate to the cities to become domestic servants, or cling to their native village, however harder be their lot there, working on the land of richer cultivators or landlords during the busy seasons of the year. The incapacity of local labourers for factory work in Bengal has not only impeded the progress of factory industries, but has indirectly contributed to lower the factory environment. The demand for factory labour is met by immigration, chiefly from up-country, the United Provinces, and Behar. Among these foreigners there is an enormous excess of males, who outnumber the females in the ratio of two to one. They migrate to Bengal to work in the factory, and live like beasts, huddled together in crowded lodging-houses. Their poverty leaves them little to spare for rent, and in the bargain the pressure of municipal taxation, which falls heaviest on huts, is heavy enough. Under these circumstances it is no wonder that the modern factory life here is becoming associated with every kind of vice and brutality.

Thus in India the village is being destroyed and the poverty of the agricultural population becoming intense. In the West the depopulation of the rural areas has been accompanied by an enormous growth of manufactures. In India the desertion of the land and the ruin of orchards have not been accompanied by any proportionate advance of manufacturing industries. Only the passion for government service and urban employment has increased. Towns have become the fields for such occupations as well as the centres of that education which opens



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them up for the middle class. The villages are no longer centres of intellectual activity; they have become associated with all what isolation and decay usually imply. How to bring back life and progress to our village is one of the most serious economic problems of the day. In the West they have their schemes for the regeneration of rural life, the small holdings movement, "inner colonization," etc. In India the land is held by small farmers. The number of small cultivators has been estimated to be about 26,000,000. Thus in India a modification of the system of land tenure is a far less important question than it is in the West. Not a change in the social structure, but a change of character, a higher economic, social, and moral standard of life of the rural people is what is required in India. No movement is fraught with greater potentialities for the moral and economic betterment of villages than co-operation. Co-operation not only leads to economic progress, it creates greater social force through mutual effort, and greater economic knowledge through practical instruction. It offers fields of work and employment for the intelligent middle class in village life, and gives them opportunities to work in the village for common ends. Moreover, it leads to a higher moral development through the need of being equitable. Not only rural economy, but rural social and moral life have been revolutionized by the co-operative movement in Europe. Co-operation has been introduced in India. It would be interesting to know what progress this movement has made in India, what have been its effects on our rural life, and what are the possibilities of its development in future.

# CHAPTER IX

## CO-OPERATION AND THE VILLAGE LIFE

THE Co-operative movement has been making great headway in our country, though the movement is still in its infancy. The main form of co-operation known is credit-banking. Few people think of any other forms. Even in respect of credit-banking the success of the movement falls far below the expectations of level-headed business men. The opportunities for its progress are indeed many. There is absolutely no other convenient source of credit open to our peasantry and artisans than the Co-operative Credit Societies where these have been organized. The Post Office Savings Banks do not touch the masses of our people. It has been estimated that hardly 2 per cent. of the depositors in the Savings Banks belong to the agricultural classes, although they constitute 90 per cent. of the total population. As for the utilization of capital, it is confined to loans on mortgage on large estates of the zemindars, leaving the great masses of our people at the mercy of the usurer. In spite, however, of these opportunities, the movement is still desultory in its character. Co-operative Societies are being established everywhere. Co-operative credit has so far proved its utility; but the intelligent and the upper class

still hold aloof. Again, the Co-operative Societies which spring up here and there in our province have no connection with one another. They are marked by no uniformity and lack anything like a certain aim. Sometimes the societies are governed by a coterie who refuse to admit new members, the difference between a Joint Stock Association and a Co-operative Society being thus forgotten. In order to remedy these defects, and systematize the work of the different Co-operative Societies, the necessity of a central organization cannot be over-estimated. A central organization will no doubt stimulate the movement, and lay the basis of a great improvement in future. We want Central Banks in every district built up by Co-operative Societies, and having a three-fold task to discharge: (1) To receive deposits from the affiliated societies, (2) To lend them money, and (3) To inspect and audit their accounts and give them advice. The last function will be bound to prove very valuable. Managers of local societies often show lack of knowledge and experience. The Central Bank will be to them a veritable information office, and such reserve of available business knowledge as it might command might surely be prized by the local societies. The Central Bank will also serve as a general Banker, and equalizer of local excess and want of cash, and an intermediary for obtaining credit from outside sources. The Central Bank might also provide money to lend on mortgage. Mortgage credit has been organized both more simply and more effectively on co-operative lines than on any other basis in such countries in Europe as Prussia, Bulgaria and Hungary. Money is

required for agricultural purposes for a sufficiently long time, for twenty or even thirty years. The Central Bank cannot possibly lock up its ordinary funds for so long; but it might raise the requisite money by debentures. The money raised by such financial transactions may be locked up with impunity. The borrower should apply for his loan to the local society which knows his property. The local society if it approves sends the application to the Central Bank. The Central Bank advances the money on the joint security of the local society's endorsement and the applicant's property. This system has been adopted with great success in Europe. The Hungarian land Credit Bank is a great national mortgage bank in the country. Up to the close of 1903 the Bank advanced no less than 662,500,000 Crowns on mortgage, and in addition 74,100,000 for improvement purposes. The State endowed the Bank with a loan of one million Crowns free of interest. The Bank makes advances on agricultural real property at a moderate rate of interest, up to half the ascertained value of the property, repaying itself gradually by a sinking fund. The system, shaped on the model of the Prussian *Landschaften*, is genuinely co-operative because all the proprietors stand together pledging all their property in common as security. Thus the Central Bank has kept Co-operative Societies supplied with cash on reasonable terms, and for long periods even in times of severe stringency. Again a further most valuable service that the Central Bank can perform is in the direction of propagandism. The Central Bank can collect the statistical data relating to

co-operation, circulate them freely, and endeavour to attract the attention of the upper classes and especially of the students of the universities. In the Bombay presidency, capitalist banks have been organized in the cities to finance the Co-operative Societies. The State guarantees interest on debentures raised by the bank, and loans are granted only on the advice of the Registrar. This is indeed a development in the wrong direction. If facilities are given to societies to borrow from outside capitalists the need for federation and combination will be obscured. Thus the full development of the co-operative organization will be retarded. Again, Central Banks organized by the Co-operative Societies themselves know fully their local requirements and can effectively supervise over them. Thus the financial business is conducted on much sounder lines than if the outside banks manage the finance.

The following table would roughly show the main sources of capital of the Co-operative Societies in different Provinces:—

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|---|---|
| 1. Bengal . . . . | Zamindars, local capitalists, and joint-stock banks through central banking unions. |
| 2. United Provinces | District banks supplied with capital by local capitalists, and joint-stock banks. |
| 3. Central Provinces | Central banks, which are financed by the provincial co-operative bank and district capitalists. |
| 4. Bombay . . . . | Provincial bank and some of the urban banks. |
| 5. Punjab . . . . | The societies themselves from deposits, and central banks supplied with capital by local capitalists, and joint-stock banks. |
| 6. Behar and Orissa | Central banks, which are financed by the provincial bank and district capitalists. |
| 7. Burma . . . . | Upper Burma Central Bank through local unions and the Registrar. |
| 8. Madras . . . . | Madras urban bank on the recommendation of the Registrar. |

The proportion of funds provided by the State is only 4 per cent. of the whole and is steadily decreasing.

In Bengal, Behar, Bombay and the Central Provinces the rural co-operative societies are usually organized on pure Raiffeisen lines. In the Raiffeisen system the members are not required to subscribe any shares; there is nothing but the universal unlimited liability of the associated members. In the Punjab, United Provinces and Burma this system has been modified. The principle of unlimited liability is accepted; yet each member is required to subscribe a share of a substantial amount. The share varies in amount from Rs. 10 to Rs. 200, according to the circumstances of the society, and is payable by six-monthly instalments spread over ten or twelve years. Shares do not get any dividend till they are fully paid up. In the Punjab and Burma, the share capital is withdrawable at the end of this period, but the profit, after provision has been made for reserve, is to be divided among the members in proportion to their shares, and credited to them as non-withdrawable shares on which dividend will be paid. In the United Provinces the shares are not withdrawable at all, and the dividend is by the bye-laws limited to 10 per cent. Mr. S. H. Freemantle, I.C.S., sometimes registrar of co-operative societies, United Provinces, considers that if the amount of the half-yearly payment is kept down to such a sum as any person otherwise eligible can afford to pay, the type is better suited to Indian conditions than the pure Raiffeisen type, which has no shares. Its advantages are, he says, (1) the

mere fact that members are required to make some small sacrifice in order to join the society is a good guarantee that they have some appreciation of the advantages to be derived from it; (2) the possession by each member of a stake in society proportionate to his status gives him a substantial and positive interest in it, in addition to the somewhat shadowy and negative interest which his unlimited liability for its debts implies; (3) the practice of saving, enforced over a period of years, should go far to encourage the habit of investment and use of capital.[1] In spite of the above advantages the defects of this type of rural credit banks are obvious. A share-bank is always in danger of being run solely for the benefit of a few non-borrowing shareholders rather than that of the general credit-needing members. When the bank is mature there is the tendency of shutting it against the poorer people and pursuing strength at the price of their neglect. The ultimate test of genuine co-operation is whether the members are prepared to admit new members who are as weak or weaker than themselves. Judged by this test, the Punjab and the U. P. type of rural bank cannot always be called co-operative. Again, it is argued that unlimited liability is not a safe guarantee; a share capital is considered to be a material ecuri for individual and corporate debts. But for villagers and agriculturists, the farm, the cattle and the implements are a material guarantee much safer than any subscribed share. In Germany "the willingness with which the peasants bring their savings to

[1] "Co-operation in India," a paper read before the East India Association.

the bank is a triumphant proof of Raiffeisen's contention that the small agriculturalists by a combination of unlimited liability and close supervision can become absolutely credit worthy. No savings since the foundation of the first village bank have ever been lost through bankruptcy." Though saving is not enforced, the Raiffeisen banks encourage investment, and many of them are able to dispense with the outside capital from the collection of deposits. Thus, on the whole, Raiffeisen co-operation is much more suitable to Indian conditions than the type of banks in the Punjab and the United Provinces. In Bengal the Raiffeisen system has worked very well, creating a new life among the peasants and linking them together with a new bond of union which has brought hope and prosperity in the midst of agricultural depression. A trial of Raiffeisen co-operation is required before any attempt to modify its application is made. Indeed, there is no special reason why the system will be found unsuccessful in the United Provinces and the Punjab if it has shown great progress in Bengal. No one doubts that the pure Raiffeisen system is a school of discipline in self-help, thrift and solidarity of interests, virtues which tend to be obscured if it is modified.

Co-operative credit, as we have already said, is the only form of co-operation which India knows. There are other forms of co-operation which are very important in the economic life of Western villages. These forms have generally developed independently on account of peculiar local conditions and circumstances of economic life. We will describe the chief forms of co-operative enter-

prise in the West, and indicate what forms are applicable to the conditions of Indian village life. Little attempt has been made in the West, except to some extent in Great Britain, to co-ordinate the different forms of co-operative activity and organize a complete system of co-operative industry. In India the movement has begun only recently, and the socio-economic conditions of Indian village life are highly favourable to co-operation, the Indian village community closely resembling in its economic structure a self-sufficient system of well-developed co-operative industrial organization. India therefore affords an excellent field of experiment towards co-ordinating the different phases of co-operation which have grown and developed on independent lines in different countries in Europe. We will show at the end of this chapter that the Indian village community, rehabilitated in a new form, may realize the ideal of an industrial organization in which every phase of co-operation receives its due importance, thus forming a well-organized co-operative state within the state.

One of the most important phases of the co-operative movement in the West besides finance is agricultural co-operation. In addition to credit societies there is in the Continent of Europe a considerable number of co-operative societies for carrying on particular forms of agricultural enterprise in common. There are societies of one sort or another for the purchase of agricultural implements, seeds, manures, etc., or the production of agricultural commodities, and finally their sale. The advantages to the individual cultivator from such co-operative purchases are (1) wholesale prices

instead of retail, (2) lower railway rates. Again, implements which are too costly for the individual peasant can be purchased in common. The spirit of association has always been strong among our people, and there are many instances of co-operative enterprises which are traditional. The manufacture of *Gur* is perhaps the best example of the application of co-operative methods in our rural tracts. The fact that the sugar-cane growers are in one locality, where a large contiguous acreage makes the average supply of cane juice large in amount, contributes to develop the spirit of co-operation. In villages we usually find that the cultivators who grow sugar-cane own one or two cane mills together. If the cultivators do not own the mills themselves, they hire it in common and pay, say, Re.1 per day's work of the mill. The canes are not allowed to lie in the fields for long, but are crushed in the common mill as soon as they are cut. Each of the cultivators has a pair of bullocks which drives the cane mill by turns. All the cultivators are engaged in one kind of work or another. Some assist in the boiling process, one taking out the scum in *Karahi*, another stirring the liquid in another *Karahi*, while the rest control the fire in the furnaces or are engaged in crushing sugar-cane. Thus the manufacture of *Gur* is carried on efficiently in the traditional system of co-operation.[1]

Such co-operative enterprises have to be multiplied in our country. The sizes of our farms are small, and it is easy to organize them on a co-operative basis. The cultivators being mostly

[1] *Vide* chapter on the Sugar Industry, *ante*.

tenants with secure tenure can be more easily organized than farmers, *e.g.*, in England, who move from district to district, having little practical ownership of the lands they till. Thus agricultural cooperation is bound to take firm roots in rural tracts, and work should be begun in a spirit of earnestness amongst the villagers. Everywhere we should establish, as they have done in the West, co-operative sugar and oil presses, co-operative threshing and milling machines, co-operative dairies and co-operative fisheries. Co-operative societies composed of fishermen for the combined equipment of boats and nets and of means for the preservation of fish are especially required in our country, the fishermen being now entirely in the hands of the middlemen, the Nikaris and the Guris. We need co-operative societies for preserving mangoes, jack-fruits, apples and *lichis* in common, societies for turning honey, fruit and vegetables to better account. There should also be cow-testing societies employing men to go round the farms and record the milk given by individual cows, and control societies whose employées keep the farmers' records of the money returns from each kind of crop, and advice as to rotation and seeds. Co-operative societies for the purchase of manure, feeding stuff, machinery and implements, for the prevention of malaria, for jungle clearing, for the improvement of land by drainage and irrigation, for the supply of water, and even gas and electricity. Co-operative societies for the sale of produce and live stock, for the mutual insurance of cattle from accident and disease, and of crops, for the maintenance of bulls for breeding purposes, are not only most

desirable but are actually indispensable to restore our agriculture. In Holland, Belgium, Germany, Lower Austria, Bohemia and Moravia such co-operative enterprises have proved very successful. Co-operative enterprises there are exceedingly varied in form and character, and they show how wonderfully adaptable co-operation is in connection with agriculture. The reason of this is not far to seek. It is a sound teaching of the science of economics that specialization and organization or large business are possible where the different processes of production permit of being carried on simultaneously. This feature of industry is almost entirely lacking in what may be called the "culture industries," agriculture, sericulture, horticulture or pisciculture, which have therefore defied all attempts at minute specialization. Only by a system of co-operation the small industry in these cases can secure the economies of production without which it cannot survive in the stress of economic struggle. There is, indeed, no other means by which our villagers, thrown into the whirl of economic struggles, can resist the economic disruption and gather strength than by uniting all the forces and cultivating all the energies of the people by adopting not merely the form but the spirit of co-operation.

In the matter of sale, co-operative marketing ensures a stable and permanent market and checks the evils of individual competition which are ruinous in the case of fresh fruits and vegetables. In our country the agriculturists have very frequently to go to the markets in the working season to sell the agricultural products. This causes an enormous waste of labour, the significance of which is often

forgotten. The system of co-operative marketing will not only prevent this loss of labour but will also ensure the sale at a more remunerative price. Already a few grain storage societies have been started in the country. They have proved to be extremely useful for the sale of corn, and they bid fair to make the agriculturalists to some extent independent of the middlemen. In some cases where, on account of the monopoly of production, the advantage of co-operative sale is very great, the Government should intervene if the people are absolutely lacking in all aptitude for co-operation. In Greece, in spite of national monopoly of currants, the currant grower could not sell currants with advantage. The state has now compelled the producers to stock a fixed portion of the crop (20 per cent.) in Government warehouses. The stock so returned, becomes *ipso facto* the property of a bank. Such stock is not sold except to large industrial establishments, whose owners enter into a covenant not to export any of it, but to consume it all under state supervision in their own establishments. The yield of such sale, after deducting management expenses, becomes the working capital of the bank, which is in truth nothing but an enforced co-operative society of producers distributing the dividend among them. In our country a co-operative society for the sale of jute will be most beneficial, jute being our monopoly. The profit of the *paikars* and *beparis* will be intercepted, the jute growers will be able to sell with the greatest advantage, while the cultivation might also improve if the society makes advances to the jute growers and supplies them with necessary materials.

Not only in the cultivation of jute but also in that of ordinary crops, such as grain, oil-seeds, etc., the agriculturist, as we have already seen, is at the mercy of the trader or travelling agent who gives him advances. The middleman's charges on food coming into the markets vary from 20 to 200 per cent. of the price which the agriculturists receive. Co-operative sale will at once intercept the exorbitant profits made by the *bepari*, while co-operative credit at the outset will check the abuses of the system of money advances in anticipation of crops.

Another shape in which co-operation has borne rich fruit, and is full of the highest promise in Western countries is in the common purchase of the necessaries of life. Distributive societies have been organized in different parts of our country, and they have served to cheapen commodities as well as to improve their quality. In Italy and Switzerland there are also co-operative societies which let out their labour and undertake contracts for public service in common, such as laying stones and doing other road work, agricultural labourers' societies producing or else letting out their land in common, educational societies promoting all kinds of educational work among the labouring classes, such as instruction in music, technical, and other instruction out of school hours, provident societies and pharmaceutical societies.

Such societies, if organized in our country, will prove the most efficient means as in the continent of Europe for the economic reorganization of society.

But the economic results of co-operation are far less important than its general effect on the rural

life. Co-operation constitutes an admirable means of popular social improvement. It tends to check the petty quarrels and bitternesses of village life, binds together men into friendly relationship, and trains the people to work in consort for a common end. Co-operation in Europe is not only recreating agriculture and the small industry; it is helping to recreate society. The co-operative society tends to become the very centre of a social and economic movement by means of which the rural life is revolutionized, and the lower strata of society raised from their position of misery and stagnation. And these results can easily be accomplished if co-operation is associated with rural education. It should also be observed, on the other hand, that no scheme of popular industrial or agricultural education in our country can be successful, if it is not associated with co-operation. The necessity of new manure or up-to-date industrial tools and appliances might be taught, but these cannot be cheaply introduced among working folk without co-operative finance. Indeed, without the spread of popular education with special reference to the facts of rural economy, the co-operative character cannot be formed, and co-operative work becomes meaningless. We want not only the form, but the spirit of co-operation. Unfortunately in our country the people do not know the most elementary matters of business. Very few if any of the co-operators have attended secondary or primary schools of the Government, and even if they have attended the schools, the books which are used as well as the schoolmasters tell them nothing about co-operation. The general press takes no interest in it, and the Government

also has not yet taken any action to propagate co-operative education. The object of co-operative education should be the formation of co-operative character and opinion by teaching the history, the principles of co-operation, and also the training of men to take part in industrial and social reforms. Such work has to be undertaken immediately if we hope for any progress. As we have no Education Act in force in our country let us organize Co-operative Educational Committees in centres where co-operative work is undertaken. Let these co-operative educational committees organize free night schools and technical classes, establish general libraries, and circulate books free of cost and pamphlets bearing on co-operation. Let them invite teachers, Schoolmasters, and Professors of our schools and colleges to address the working folk on subjects connected with co-operation and its social and economic importance. The students of the university should also be encouraged to take part in the work of co-operative education. As long as there is no wide diffusion of popular education it must be plainly owned by all honorary organizers of our co-operative credit societies, that their work of teaching is far more important than organizational work, their chief task is not so much to swell up the co-operative credit business to the biggest possible bulk, as to make the agriculturists understand the principles of co-operation and credit. Where the educational work has been neglected credit banks are organized on unsound co-operative principles, and the progress of the movement is retarded. Unfortunately there has been but little attempt to associate educational work with the co-

operative movement in our country. Even many of the organizers of the co-operative societies do not possess the necessary knowledge of the aims and ideals of true co-operation.

Co-operation is becoming a science in the West. In India, however, it seems that we have not gained much both from the practical experience as well as the theoretical study of the subject in Western countries. Though the co-operative movement has taken a firm hold in Indian soil, there has been little attempt to utilize the existing village social structure. To this extent the movement is not organic, a growth from within. Indeed, conducted as the movement is by the initiative of the Government, it does not reflect the spontaneous development of the co-operative spirit among the people, the agriculturists and artisans who are its ultimate guardians. To this is coupled the lack of a broad philosophy and statesmanlike vision of the Government officials, who have originally determined the course of the movement. In India, the Government has carried Sir Frederick Nicholson's remedy, "Find Raiffeisen," too far. Co-operative credit has been unduly emphasized, while agricultural co-operation, co-operative purchase, and co-operative sale have been left in the background. Raiffeisen alone could not save the German peasants. There was need also of Dr. Haas. Even Raiffeisen himself organized agencies for the business of supply. The supply of cheap credit is not enough for the peasant. The peasant might lose all in marketing the produce what he has gained from cheap and easy credit. Again, the materials of agriculture might be in the hands of

ignorant and dishonest middlemen. Thus the benefits of co-operative finance are counteracted when manure, seeds and machinery have to be purchased dearly. Indeed, co-operative purchase and co-operative sale societies are as essential as co-operative credit societies.

In Europe co-operative credit and agricultural co-operation have progressed together, each deriving its strength from the other. The following table gives the birth dates of credit and agricultural co-operation in different countries in Europe:—

| | Credit. | Supply. | Production (dairy being usually first). |
|---|---|---|---|
| 1. Germany . | 1850–60 | 1860 (about) | 1871 |
| 2. Denmark . | — | 1866 | 1882 |
| 3. Ireland . . | 1895 | 1890 | 1889 |
| 4. England . | — | 1900 | 1900 |
| 5. Switzerland | 1890 | 1886 | — |
| 6. France . . | 1885 | 1884 | — |
| 7. Belgium . | 1892 | 1890 | — |
| 8. Italy . . . | 1865 | 1884 (about) | — |

In India, though the co-operative credit movement was initiated in 1907, it was not till 1912 that the necessity of organizing co-operative societies other than credit societies was felt. The Co-operative Societies Act of 1912 has widened the scope of co-operation, and reconstructed the Co-operative Credit Societies Act of 1904, being now extended to co-operative societies other than credit associations. Even now societies other than credit societies are classed on the Government monographs under the colourless heading, "Other Forms of Co-operation." This is indeed a striking proof of the artificial character of the movement. The

Mahajan's usury has been dilated upon, but the peasants feel as keenly the rapacity of the corn-dealer who has given them advances. Unless we save the peasants from these exacting middlemen, we cannot expect that they will reap the best fruits of co-operative credit. As it is co-operation has touched only the fringe of the economic life of our poor peasantry. Not only co-operative purchase and sale societies, but also stores, co-operative production, insurance, in fact all the forms of co-operative activity described above which have contributed to raise the tone of rural life in Europe, have altogether been neglected. Credit has been unduly emphasized as a factor of production. While the organization of agriculture which has enabled the small farmer to oust his rivals in Europe is up to now entirely ignored.

The problem before the Indian co-operator in future would be to give its due importance to every branch of co-operative activity and to co-ordinate the different forms of co-operation in subordination to the co-operative ideal in view. His aim would be to utilize the existing social structure of the Indian village for this purpose: otherwise the movement will not touch the hearts of the people. And he will not fail to profit by the lessons derived from the growth and progress of the co-operative movement in all its phases in the West. In India, where the traditions of the village community still persist, the village artisans serve the whole village or a fixed circle of from thirty to fifty families, and receive small monthly payments of grain and money with other customary perquisites. They often hold in addition a small plot of land rent free, in

remuneration for services rendered to the villagers. The village community is thus to some extent an association of consumers, and is itself directing village production. On account of the combination of a group of consumers, production is carried on in the interests of the consumers. And this represents the highest co-operative ideal. The village community cannot be revived in India, but the economic ideal which underlay it can be revived. That ideal may be expressed in the modern language of co-operation thus, ethically the consumer transcends the producer. The consumer's interest is actually the common interest of all members of society. The producers represent one class of society, but all classes are consumers. The village community represents the interests of consumers, and if these interests differ from those of the producers, the former prevail. Thus if the producers combine and misuse their monopoly power by forcing heavy prices, the village community is a most valuable defence of the consumers. The counterpart of the village community in the modern economic world is the village store. Though in the countries in Europe where the co-operative movement is in an advanced stage of development, the store organization forms but a small part of the movement as a whole, its social and economic significance far outweighs the inferior numerical position with regard to other forms of co-operation. The distributive society in the West has been found to possess much greater life and vitality than other forms of co-operation. Its activity gradually encompasses the sphere of other phases of co-operative enterprise, and it seems in future that there will

hardly be a social problem which the distributive societies will not be able to solve or help in the solution. The distributive society indeed gradually becomes more and more differentiated and forces its way into new economic and social fields. The little grocery store in the village not only becomes a spacious shop, but new branches are opened throughout the district. All these branches are grouped round central premises and warehouses from which they are controlled. Gradually, when the sale of the articles of daily use increases, separate departments for the supply of coal and wood, boots and shoes, etc., are opened. A large distributive trade leads to the establishment of productive departments. Thus the distribution of milk leads to the establishment of creameries and under favourable conditions to the starting of dairy farms. The trade in vegetables leads to their cultivation, the boot trade to a repairing workshop and even to a boot factory, the sale of ready-made clothes to tailoring, dressmaking and millinery.[1] The great wholesale societies in Great Britain and some of the individual retail societies, have established factories and workshops of their own for making shoes, clothing, hardware, biscuits, jams and pickles; they have even tried tea-planting in Ceylon, and farming on their own account in Great Britain and Ireland.[2]

The amount of production carried on in connection with the store forms the characteristic feature of the British store movement. Several distributive societies have exceeded this list of

[1] Dr. Hans Müller's paper, "Report of the Proceedings of the Eighth Congress of the International Co-operative Alliance," 1910.

[2] Tausig, "Principles of Economics," p. 357.

industrial undertakings, and begun to provide their members with housing accommodation. They either erect dwelling houses, the management of which they keep in their own hands, or make it possible for their members to build cottages for the accommodation of one family for themselves by granting them loans ; in a few instances, indeed, distributive societies have actually founded towns, and ventured to cover large areas with buildings erected on some well-designed plan, they themselves erecting the building through the medium of their own architect, and building offices and a large staff of work-people who are constantly employed. Here and there, too, distributive societies have successfully undertaken the care of the sick and the maintenance of public health by the establishment of dispensaries, crèches, and convalescent homes, insurance institutions, etc., while the cause of education has found within their ranks many enthusiastic supporters and pioneers.[1] They have opened libraries and reading rooms, arranged lectures and courses of study, and counteracted the reading of harmful novels, etc., by circulating good literature, accomplishing not a little in educating the masses in co-operative and social modes of thought. Finally, they have taken their share in philanthropic work, either by subscribing to the support of public institutions or in founding

[1] The first rule of the Rochdale pioneers laid down "that a definite percentage of profits should be allotted to education." And, faithful to this example, the model rules of the co-operative union recommend the putting aside of a 2½ per cent. of the profits as a fund, and the election of a special committee for its management. In 1906 the educational grants of the societies amounted to £83,000 (Fay, "Co-operation at Home and Abroad," p. 332).

new ones. They have started "people's houses" (*Maisons du peuple*), taken part in the fight against alcoholism, and also established lodging houses and shelters of the poor.[1]

Such has been the encouraging expansion of the scope and ideals of co-operative distribution in the West. The association of consumers, for the satisfaction of the varied wants of social existence, has not only contributed to raise the standard of satisfaction, but has actually created new and higher wants. When commodities are produced and distributed from the standpoint of the consumer, the economic advantages are manifold. The consumers are able to obtain what they want in the amount and quality in which they want it, and by the machinery which seems to them most suitable. Production becomes an easy process due to the elimination of the risk which inheres when the makers of articles are separate from the consumers of them. Again, in the business of sale, important economies are effected. No sums need be spent for show and advertisement, for the sale organization belongs to the consumers, and the consumers, being their own shopkeepers, the expenses of management, supervision, and control are economized. Again, the consumers create a cheap and effective agency for the supply of daily perquisites, which is entirely under their own control. They buy commodities direct from the wholesaler or producer, and thus have not to find the profit for a series of middlemen and intermediaries. Thus commodities will sell cheap. Again, when the

[1] Dr. Hans Müller's paper, "Hamburg International Co-operative Alliance."

demand for commodities of the united body of consumers is sufficiently strong, the consumers will be their own producers, financiers, and landowners, and will appropriate for themselves the entire benefit accrued from the association of demand with land, labour, and capital, which alone can be conducive to maximum economy.

But the co-operative store is not merely a trading association. Through its trade it confers important social boons. The store induces the working classes to form the habit of "cash-payments." It stimulates thrift among the working class by encouraging investments. In Great Britain, frequently in large societies, a first subscription of one shilling is the only payment in cash required, the balance due in respect of the member's liability in respect of his share being provided by crediting his share account with the sum to which he becomes from time to time entitled as his share in the profits. Again, the dividend is generally used productively; either for further purchases at the store, or for the acquisition of house-properties, or for re-investment with the stores as share or loan capital. In Great Britain, in many towns, building societies grant loans to working men for the purpose of purchasing their houses. The profit from the co-operative store is frequently used to meet the instruments of the loan. Many have in this way become the proprietors of their own houses without effort. Not a few of the co-operative societies have a building department which lends to their members, the profits being simply transferred to repay the loan. The store thus stimulates thrift by opening up different fields of investment for the

working class. It also disciplines the working class in habits of patience when the reward of labour is sure. It opens upon new vision for the workman, and kindles him in a real desire for a happier and a nobler living. It provides a field in which any workman can rise by his knowledge and intelligence to the highest position of leadership and responsibility. It is a democratic organization ennobled by its moral purpose, embodied in the co-operative principle of "all for each, and each for all."

In India the village community will have to be rehabilitated in the organization of the village store. Village stores have to be organized in every village. The Indian villagers' needs are calculable with a fair degree of exactness. Thus there will be little difficulty to adjust the resources of the store to the village requirements. All the villagers will contribute each a small sum as subscription, and hand over the amount to a committee of leading and influential men selected by the villagers to look after rural economy. The committee will then make arrangements for the establishment of a store for the sale of provisions, clothing, groceries, etc. Sale at market prices with cash payments and distribution of profits among villagers in proportion to the amount of their purchases will be insisted upon. As sales become large the village store will give employment to village artisans, the weavers, the blacksmiths, the potters, the bell-metal workers, etc., as well as the cultivators.

Not only peasants and handicraftsmen but the middle classes, those who have obtained higher education, might have employment in any one of the departments managed by the co-operative store.

For the central co-operative distributive society will conduct institutions like schools for agricultural and technical education, circulating libraries, and reading-rooms. And not only schools, agricultural and industrial institutes for imparting literary, agricultural and technical education to the villagers, and conducting researches and experiments on the spot with the object of utilizing the natural resources of the village, but also factories, aided by up-to-date machinery and motive force, which will also belong to the village community, In fact, all the village requirements will be supplied from the resources of the village in land, labour, capital, as well as knowledge and skill through the co-operative society. The villagers who gain some technical knowledge will work in the factories under the guidance of the middle class without, however, giving up possession of the soil. Thus the schools and factories of the village, while providing scope for the activity of the middle classes will satisfy some of the more important needs of the village. These present needs of Indian villagers may be roughly classed under the following heads :—

Food, clothing, shelter.

Medical aid.

Education.

Religious instruction through musical play (Jatra), story-telling (Kathakata), songs and recitations, social amusements, and festivals.

Arbitration and protection.

Drainage and sanitation.

Money and the mechanism of exchange.

Conveyance; maintenance of roads, canals, and waterways, irrigation.

Storage of rain water and of crops.

Insurance of life, of crop, of live stock against disease and deterioration.

All the above needs will be attended to by the distributive society of the village through its different departments. The store will not only satisfy the hunger of the community, it will also keep in view its intellectual and spiritual food.

Every villager will have to do some kind of work in any one of these departments, and he will have his requirements satisfied by the village commonwealth in proportion to his service to the society. Thus the whole body of people will work, each man in the sphere he most likes, accepting with determination and intelligence their place as members of the co-operative system of industry which would represent in its development the fine picture of "a state within the State." The village commonwealth will manage the finance of the village, its income and expenditure, and lead the village to progress and prosperity. The system will be conducted for the people and by the people, ensuring the development of their intelligence, self-help, and independence. Each of these co-operative commonwealths in the village will gradually become associated with other societies, assuming provincial and ultimately national dimensions. The federation of the distributive societies will immensely strengthen the idea underlying the movement, and lead it with certainty and force to the ideal of the emancipation of the masses.

Such a system would continue in its working the traditions of our old village community. It would emphasize the economic ideal which dominated

the village community that the consumers' interests are prior to those of the producers, that consumption being the end and goal of economic activity, production is subservient to it. It would also be consistent with the process of historic evolution of the Indian village. In India the village has an independent development of its own. Its social and intellectual activity has not been determined from without. The political organization in India has never been able to control every sphere of Indian life. Decentralization has been the spirit of the Indian social system. To the state has been entrusted the task only of protecting the people from foreign invasion, and internal discord and anarchy. The administration of justice, education, and the preservation of peace, and the suppression of crime have been left to a great extent in the hands of the people. And it is for this reason that the Indian social system has lived and progressed irrespective of the vicissitudes in the Indian political life. The state in India has touched only the hem of Indian life; the Indian village has been more or less a state within the state. Thus the villagers have been disciplined in the virtues of citizenship. The leading villagers, who are men of public spirit, have undertaken unpaid work in the community, and been rewarded with prestige and privileges. The headman of the village has decided family quarrels, caste troubles, and petty village disputes. None have gone to court before first consulting him, for none have doubted that the headman in giving advice has never been guided by petty considerations. When the headman has decided petty

cases his impartiality has been proverbial, and his decisions have always been accepted with a good grace. The law of the land can never act into the domain of family morality; the headman, however, has been called upon to decide cases of immorality and breaches of discipline not cognizable in law. And the punishments which he has meted out in these cases have been feared more than any punishments in law courts. The civic activities of the village, the joint enterprise towards the promotion of social well-being have, however, as we have already seen, been jeopardized by the migration of the middle classes from the village to the city. The system of co-operation will stir up the intellectual and social life of the village, direct its activities which have hitherto been more or less disorganized, into well-defined and fruitful channels, and also provide work and employment for the middle class which has grown tired of the languor and monotony of village life. Thus the village community will be rehabilitated, and guided and controlled by its natural guardians, the middle class, in which the lessons of co-operation in the West will not be lost, will become as of old centres of intellectual and social activities, enriching the inheritance of the past.

We have indicated in an outline the suggestions as to the future development of co-operation in our villages. Some of these suggestions indeed appear to be dreams to many. But it is time for us to cherish dreams. The crying need of the movement at the present day are the dreamers and the idealists, men who are inspired with the co-operative faith, like the faith of a missionary, in whom a religious and social enthusiasm is mingled

with a sound business knowledge and practical skill, who continually preach the co-operative ideal from village to village, and from door to door, and live unseen and unknown amongst humble villagers in order to soothe their woes and sufferings. It was one or two men who made English savings banks what they are; it was a few artisans at Rochdale who laid the basis of co-operative distribution, and one or two enthusiastic men in France have revolutionized French agriculture by organizing the co-operative supply societies. Of the work of Sir Horace Plunkett in Ireland a whole chapter might be written. In Japan, too, it was the devotion and martyrdom of one man, the philanthropist Sontoku, which built up the Hotoku-shas. There is no doubt that such men will be found in our country too. Some day, in the near future, the zamindar, who has seen his peasantry impoverished and overwhelmed with debts borne from generation to generation, and his lands deserted and overgrown with weeds, and soon too the student of the university, who has watched closely and thought deeply about the economic evil which is fast disintegrating our rural life, will be fired with enthusiasm and philanthropic fervour, and bestow their time, money, and energies freely upon this good cause of helping the poor to help themselves. With such men lies the future of this movement. It is only the idealism of those who are intellectually aroused, or are placed by fortune in easy circumstances, that can solve the social and economic problems of raising morally and materially the impoverished industrial and agricultural population of our country.

# CHAPTER X

## THE ETHICS OF INDIAN INDUSTRIALISM, AND ITS LESSONS FOR THE WEST

THOUGH the line of the future industrial evolution of our country cannot be anticipated in all its details, we have in a measure indicated its general trend. The Indian industrial organization will be profoundly affected by its coming into contact with the methods of Western industrialism; but its evolution will on the whole naturally be circumscribed by the environment, both physical and psychological, the socio-economic traditions of Indian life, thought and experience. There are certain elements in this environment which will assuredly tend towards the conservation of the present economic system, while there are others which will themselves be greatly modified, nay, which will entirely disappear, leading to the creation of a new economic order. Between these two limits, the Indian industrial system will pursue its line of evolution: unless we suppose that the whole system entirely collapses by the shock and collision of alien forces and tendencies, working ruthlessly with a sudden and irresistible strength and violence—a supposition which is untenable if we remember the

solidarity of our social organization, the strength of our social forces, and the tendency at present conscious in society of rightly estimating social values due to a growing regional and national idealism.

India will not adopt Western industrialism in its modern phase with its too exclusive adherence to the principle of division of labour, its deficient organization towards general well-being. In the system of social organization, India will proclaim the principle of integration. India will not divide society into a number of distinct groups or classes, with their divergent and even conflicting interests, and thus endanger her social stability. She will, on the other hand, devise fresh bonds of union between man and man, class and class, so that man and man, class and class, live and thrive for each other's sake. She will not exaggerate the division of labour, when its differentiation means life within a narrow groove, monotony, narrowness and loss of culture. She will, on the other hand, co-ordinate the different types of economic and social life, allowing each type to develop itself in harmony with other types. In her social economy, India will have specialization, but will not allow specialization to overstep its limits. Specialization in India will mean social service as well as individual initiative, socialization as well as differentiation. Thus the narrowness of individualistic social organization will be overcome. The family will be a social institution; caste will represent a larger unity than the family. Religion and morality will be shorn of their individualistic tendencies. Society will be permeated by a spirit of social service. It

will not be dominated by the ideal of profits for the individual. Industry and education, amusements and recreations, ownership and enjoyment will be regulated in the larger interests of social well-being. Modern industrial society has created a sharp distinction between the urban and the rural population, between producers and consumers, between specialists and ordinary men. India will tend to establish a solidarity between the village and the city, the labourer and the employer, the specialist and the layman, the multitude and the genius, the brain worker and the manual labourer. In the system of social organization India will not allow the city to exploit the village, she will retain the vitality of life and culture of the village. She will not suck out the blood of one part of society to feed another part. She will not nourish one organ exclusively, and allow another organ to be atrophied, but she will feel the pulsations of life deep and strong in her throbbing veins in every part of her social system. In the employment of man, she will limit division of labour when it is destructive of culture and social ethics ; she will not sacrifice real well-being in the interests of concentrated production. She will not adopt the Western system of concentrated production when it will not be conducive to the social health.

The excessive centralization of industry into the big towns and its control by a few capitalists,—characteristics of Western industrialism,—have their warning lessons for India, and India will prevent the centralization of industry in her own soil except in the few cases like mining, railways and transport industries, where they are economically

inevitable. In these industries, again, India will not dehumanize her labourer. She will give the family of each labourer a plot of land where it can work at intervals, thus preventing the monotony of work in the factory which is so exhausting and demoralizing. Manufacture will be combined with agriculture, the work in the field with the work in the factory. Labour in the factory will thus be relieved of its drudgery, while the work in fields and gardens will be more enjoyable as a change of occupation. She will introduce the co-operative system by which each labourer will have some share both in the control and in the profits of the industries. Thus the object of industry will be not to make unlimited wealth for the few capitalists; but to make unlimited wealth and distribute it at the same time amongst all classes, not to encourage the growth of business ability and power of control amongst one class, but to extend opportunities as far as possible whereby more labourers may become business managers. The Indian labourers, again, will not have to live in hovels and cellars huddled and crowded together where life cannot but be unworthy of man. There will be built adequate homes for the labourer's family, the influence of the family in moulding the human character being thus fully recognized. The sanctity of family will be preserved when each family has its own homestead, and still as far as may be a hereditary one. Not only is there moral gain in consequence of the maintenance of family integrity but there is also an increase of general well-being. The affection of the mother and the unceasing devotion of the wife are indeed powerful aids to a noble and happy life. The

labourer will be stimulated to work by the needs of the family. He will fashion his life according to his own ideas, or those suggested by the ambitions of his mother and his wife. Thus he will be saved not only from the monotony of work but also from the monotony of life. And the influence of social amusements and caste-dinners in this connection will not be discontinued. In those fields of industrial life where centralization is not necessary, India will be more free to follow the line of her past industrial evolution. She will revive the cottage industry where it is being annihilated : and in this process of revival the best methods of applied and mechanical science of the West will be adopted by her. Her cottage industry will always be aided by agriculture on a small scale, poultry farming, dairying, vegetable gardening, etc. Thus the family will be more or less self-supporting. There is the small plot of land where the vegetables of the season are grown, the women of the house nurturing them at their leisure. There will be two or three looms, often driven by a cheap small motor, or by means of electricity supplied from the central depôt of the village, whose expenses may be met jointly by all the villagers,—a co-operative enterprise the village will be justly proud of. Thus the recent improvements of applied science in the West are within the reach of the village weaver. The boys and girls in the weaver's cottage help their father by manipulating the strings and arranging the threads automatically, while he is weaving. The women manage the household and spend their leisure profitably. They work in the vegetable garden, feed the cattle or poultry, make cowdung, spin cotton or weave

baskets. Homes are beautified by the handiwork of the family and the popular art is encouraged. Life is strong, beautiful, and noble. Work is a pleasure, a joy. Industry is thus united to art and ethics supported by her handmaids, science and technics.

Industry in India will flourish throughout the country in villages and be not confined to a few rich cities. The villages will share with the cities the industrial activities and technical and scientific achievements of the nation. Thus science and knowledge, labour and wealth will be distributed all over the land. Every part of the country, and not merely the big centres of manufacture, will throb with the pulsation of a deep and full intellectual and industrial life. Resting on the joint family life and the land basis, our village communal life will develop, invigorated and enriched by the lessons of co-operation in the West. Co-operative banking and other forms of agricultural and industrial co-operation, as well as associations for the joint promotion of objects conducive to social well-being, will flourish as in the West, being readily assimilated by an easy process into the structure of our traditional village community, naturally imbued with a strong communistic sense.

Again, in the village commonwealth industrialism will not comprehend the whole of life. The manifold social and intellectual activities of the village, the village musical parties, plays, recitations and religious festivals, feasts and amusements, will contribute to give a healthy tone to the industrial life. The excesses of industrialism will be tempered.

Industrialism will be subordinated to the ends of real social progress.

Such are in general the economic methods and practices of India of the future as we anticipate them. It is unquestionable that they will have a deep significance for the modern industrial world of the West. The last word of the Western industrialism has been said. Its doom has been sounded. The reaction to socialism has been strong, persistent and widespread. A crass individualism, unrestrained by morality or religion, has produced untold-of wealth, but in the very process of the creation of wealth it has sapped the foundations of society. Society cannot be stable when individualism implies license. The vast wealth that has been produced by the nation is enjoyed only by the few, and is spent by them not in the interests of social welfare, but lavishly squandered away in a spirit of extreme selfishness and shortsightedness to satisfy their personal whims and caprices. Modern Western society will not tolerate this any longer: the hard discipline of the working democracy has had its lessons.

Men are coming to know that wealth is necessary for all in order to make life more enjoyable. The intelligence of working men has been aroused. They have come to understand that the capitalist employer has subordinated their well-being to his own desire for gain, and they are demanding social re-organization accordingly. A universal system of education is making these demands universally popular. The cry for socialism is now universal in the West.

But socialism cannot reform Western society.

On the other hand, it will destroy it. What Western society is now in the greatest need of is not socialism, but a re-constructive social idealism. Individual initiative, genius and enterprise are the source of all social progress. Individualism must not be neglected as a formative element in society. But at the same time, its acerbities have to be smoothed down by an ennobling idealism. The ideal industrial order will be conducive to the maximum social welfare, while giving the maximum individual liberty, and will appear to be comparable, in the words of Prof. Huxley, "not so much to the process of organic development, as to the synthesis of the chemist, by which independent elements are gradually built up into complex aggregations in which each element retains an independent individuality though held in subordination to the whole." The due maintenance of individual liberty, and the subordination of individual needs to social welfare should be the objective of a scheme for social regeneration. The consummation of social progress, says Fiske, is the thorough adaptation of individual desires to the requirements arising from the co-existent desires of all other individuals. The fundamental weakness of Western socialism has been that its roots lie in a bare materialistic conception of life. The nobility and grandeur of individual development, the respect for human personality, are therefore missed in such individualism after all.

In a merely socialistic organization, however much the socialists say that they intend to "rationalize" individualism, and to create a nobler type of individualism, individuality will be curtailed. Intelli-

gence and character, higher than the average, genius and inspiration, the personality of those who in the existing social organization become heroes, seers and prophets will be deadened in the socialistic regime.[1]

India, with her transcendental ideals of life, has long set up a type of social organization which, though expressly directed to the ultimate end of self-realization and emancipation for the individual, never missed sight of the unity of all individual selves in society. Society to the Hindu is the Divine Prakriti made manifest. The absolute working through Maya has this mediate existence, society.

[1] Professor F. W. Tausig, in an excellent chapter on socialism, in his "Principles of Economics," remarks: "There is no such thing as unrestrained freedom. Men live now within limits set not only by the need of earning their living, but by law, by custom, by the environment. In the socialist state there would be necessary restrictions also, in some respects similar, in some respects different. A bureaucratic and semi-military socialism is conceivable which would crush individuality. A regulated and refined system of private property is conceivable, with unfettered freedom of opportunity in which there would be a completeness of liberty hardly to be attained in any socialist state." Later on, however, he puts forward serious objections against socialism. "It is well-nigh impossible to conceive that any governmental organization, democratic or autocratic, will be able to pick out the men of originating ability. A vast collectivist organization would hardly fail to be deadening to genius of all kinds. Would not its selection of leaders be at best a recognition of ability to do well?" He applies considerations of a similar sort to the development of capital, and thinks there will be no increase of effective capital, no improvements of tools and machines in the socialistic regime. "The increase of effective capital is closely interwoven with the selection of capable leaders. Both are essential for continued progress. For both, existing society offers the bait of riches. With an ideally perfected community with ideal leaders, spontaneously chosen, all things are indeed possible. But under a non-competitive organization, even in a community far advanced in intelligence and character, there would seem to be but slender prospect for sustained material advance" ("Principles of Economics," Vol. II. p. 469).

The duty of man to society is governed by his relation to the Absolute as the self of all selves. Thus every service to society is self-dedication, a step in the realization of God-in-man. Such is the ideal which has dominated, or still dominates, all relations of man to man in Hindu society. And such ideal has left its permanent marks on the outward structure of Hindu society. The best ideals and ends of the socialism of the West are already held in solution in the Indian social organization.

The communal holding of land in the typical village community is superior to any state organization along one line; and the organization of co-operative village industries paid by the village community would contain all that is most vital in schemes of state organization of industry. Besides, the Hindu joint family gives full scope to co-partnership in the family life, on a co-operative basis, and thus tempers the harshness and excesses of individualism. Similarly the caste system also represents one step in advance of the joint family towards a larger unity in society. The communistic and collectivistic sense, the implied socialisms and humanisms, are much stronger in India than in the West. The basal facts of the Indian social and family life furnish occasion for a perpetual discipline in human and social sympathies, and in the repression of the aggressive instinct of the individual which is so strong in the peoples of the West. Thus the Hindu social organization, while checking the excesses of individualism, does not obscure its glories. The Hindu society establishes a system of communism, but does not sacrifice individual

initiative. To the Hindu individualism and communism are not ends in themselves. They work within the limits of, and are controlled by, the governing end—the development of individuality of every member of society. Thus India holds the scales even between these two extremes. The individual cannot realize his particular ends without a similar realization of the particular ends of other individuals and classes in society. For the realization of the collective ends of society, on which depends the realization of the particular ends of individuals or classes, every individual or class should work. Such an organic conception of society supplies the ground and the philosophy of Hindu communism.

This philosophy of communism is strengthened by our transcendental ideals of life. The gradation of social values in India is not according to land or other wealth, or rank or political office, but in theory according to a man's spiritual strength, and the degree of his realization of the Divine. This was the principle underlying the Varna-ashrama-dharma, the sacred code of duty of the Hindus through ages. Even now the respect for learning, for character, for spirituality, are still living forces amidst us. Plain living and high thinking is not a distant ideal, but an actuality very often realized. Poverty and self-denial are still striven after. Poverty being thus sanctified has no such brutalizing, degrading anti-social influences as it has in the West. The poor need not necessarily be degraded. On the other hand, the poor man often obtains the whole nation's devout worship and homage. This idea is fixed

in the regular institution of almsgiving enjoined on every *grihastha*, or householder, by the social code.

Lastly, along with the socialization of moral standards and ideals, the respect for virtue and piety—the ideal of poverty and self-denial, there is the element of mysticism pervading every aspect of Hindu life. This mysticism determines the Hindu's attitude towards the satisfaction of wants. The West believes in the multiplicity of wants, in the progressive expansion of wants serving as a spur and stimulus to creative and productive activity, and to further mastery. India practises the art of simplifying her natural wants, so that she may be more self-centred and self-sufficient, and may cultivate her moral and spiritual life with greater leisure and assiduity. The West begins to feel the pressure of her multiplying wants, and in the feverish pursuit of the materials and instruments of satisfaction she begins to realize that she is missing that inward satisfaction which is the end and goal. India can never wholly lose her discipline of the limitation of wants and the concentration of activities for the development of the soul. To India the mystery and grandeur of the limitless vistas of the development of the soul are far more inspiring and fascinating than the mastery over external physical nature. She is not, therefore, in the habit of constantly creating new wants, and of thus concentrating upon the adaptation of Nature to her ever-multiplying needs. Not that India does not seek mastery over Nature. India adapts Nature to the essential needs of life, and these as much as the West. Witness

her successful agriculture, her skilled handicrafts, and her artistic industries. But the sense of the mysterious and stupendous life which transcends Nature always predominates. The searching gaze of man is, therefore, directed less to the system of Nature than to the Life which is at once immanent and transcendent in it, the Self of all that lives and moves, which is beyond the bounds of Space and Time, Matter and Energy.

Such is the Indian conscience and the Indian spirit. The underlying and essential note for this spirit and this conscience is the profound respect for Personality, for the Spirit, for the Life eternal. The Indian social organization is so framed as to lead the individual through the successive statuses and stages of life to the Life Eternal, in which alone he finds Rest and Peace. Such a fair fabric of society with its ideal as the realization of God-in-man for every individual cannot wholly be shattered by the collision and shock of the forces of mechanism and monetarism that have fast grown in strength, and are now in evident conflict in the Western world. If the progress of the world is to be believed in, the social organization conceived by the genius, the intuition and the vision of the land and the people of the Himalayas and the Ganges has a message to the West which shall be heard. It is from materialism, from the bondage of the Life Eternal to blind matter, that it hopes to bring salvation. Where industrialism sees wealth in things rather than in men, where machinery instead of aiding the development of personality promotes inhumanity, India still stands for a loftier idealism, a profounder respect for

Personality, a deeper message for Humanity. In the real interest of Personality and Humanity it will control mechanical production, so that machinery and mechanism will not retard culture and refinement, but foster them. Where appalling poverty is persisting betwixt abundant wealth and unemployment, and in the midst of unsatisfied desires of the rich and poor alike, it will renew its ancient example of the profound regard for Man as man. The love of ease and luxury will be kept in its place by a keener sense of brotherhood, and the possession of wealth will be seen as enlarging the sphere of duty towards society. Where the conflicts between labour and capital have destroyed social stability, it will prove the necessity and paramount importance of their co-operation. In the interests of social peace it will maintain an equitable distribution of wealth in the community by checking the excessive concentration of capital, and thus subordinate the ideal of mere mechanical efficiency to the ends of real social progress. Without retarding individual genius and initiative, it will prevent the excesses of individualism by infusing into society a spirit of co-operation and communism, by working on a more rational and spiritual conception of life. Turning away from the mad and all-engrossing pursuit of wealth, with its life at high pressure, and the growing bitterness of struggle for existence, it will distinguish between wealth as a means and wealth as an end, and restore and maintain respect for a life of poverty and self-denial. Above all, it will establish that true welfare does not depend upon the possession of wealth, and the satisfaction of desires. It will find for an

unsatisfied restive Humanity that the best wealth by gaining which one finds complete satisfaction is gained not from without but from within, not in feverish activity for selfish and personal ends, but in the consecration of life in the service of society and Humanity.

## CHAPTER XI

### CONCLUSION

We have now seen that our economic organisation is not primitive and mediæval. It does not represent a crude stage in the process of Western industrial development; but it is an adaptation to our own environment, and this in the light of our own social and ethical ideals, our own life-values. Our life estimates and aims have been different from those of the West, and hence we have evolved a different social structure. To regard our economic structure as either mediæval or obsolete would be a gross and inexcusable blunder. Our economic structure is as "modern" as that of the West, and it will pursue a line of evolution not towards the so-called "modern" or Western industrialism, but towards a fuller and more determinate Indian industrial order. This characteristic line of Indian economic evolution and these ends of Indian economic order I have attempted to indicate in the previous chapter. India will thus pursue its own lines of economic evolution and will conserve and develop her characteristic ideals of art, ethics, and social life. The growing regional and national idealisms that are becoming manifest amongst us all point towards this.

In the interests not only of Indian culture but

also of Universal Humanity, India must have her own industrial life and destiny. On one side there is now coming upon India the dominant Western industrial civilisation, with its sharp distinction between the village and the city, between labourer, landowner, and capitalist, between hand-labourer and brain-worker, between specialist and layman. Not merely in the social organisation but in science as well, this has exaggerated the division between industry and art, between the sciences of the inorganic and organic, of the living and the non-living. The same mechanical principle of distinction has created the modern contrasts between ethics and business morality, between ethics and state-craft or diplomacy. In socio-legal relations it has unduly emphasised individual proprietary rights, and with these the individualistic conception of the marital relation which is the basis of the family.

This order of things with its exclusive adherence to the principle of the division of labour, with its deficient organisation towards general and vital efficiency, is avowedly mechanical; and hence, in spite of its boast of modernity and progress, has done very little in developing life and well-being.

The synthetic vision of India will be the sorely needed corrective of the rigid, analytical, mechanocentric standpoint. In its social reorganisation, India will not allow differentiation to go beyond its due limits. Specialisation in India will imply social inspiration as well as individual purpose. Division of labour will be towards social welfare as well as towards individual efficiency. In the field of production mechanism will not militate against the interests of vital efficiency and social well-being.

The small industry will be more favourable to an equitable distribution of wealth and hence to social stability. The large industry implies an army of intermediaries and middlemen. The small industry by the extreme simplicity of its organisation diminishes economic friction and avoids the conflicts between the different classes which share in distribution, *e.g.*, between the labourers and the capitalists, which have destroyed social peace in the West. The locale of that industry will be the cottage. The home, and the family, the caste and the social environment humanise and socialise the labourer. In agriculture, on account of the peasant's rights in the soil, the family as the sociological unit and the small holding of land as the economic unit will assert their full social values. The family develops sympathy and personal relations. It combats brutishness, the nomadic or caravan spirit, vagabondage, ferocity, predatoriness: in short, it destroys the spell of monetarism and militarism. The family, and then the caste, *Jati* or *Samaj*, ethical and social, are the basal factors in eugenic and eupsychic reconstruction. The land basis—work in direct touch with nature—is healthy and educative, that is eupsychic. There is no doubt that agriculture is a school of the virtues of sobriety, forethought, and mutual helpfulness. Success in agriculture implies only the exploitation of nature. Urban economic prosperity, on the other hand, is based on exploitation of man. Cities thus hold a large proportion of parasitic population. Rural economy prevents the waste of friction due to conflicts of interest among individuals and groups, and brings about social harmony in industry. The

land as the basal factor of economic life is the best insurance against class warfare and the consequent economic unstability due to the irregular and inequitable distribution of income. That is eudemic. India is seeking this ideal in society and is preparing its renewed expression in the community, in the city and the village, in the family and the caste, in her industrial life as well.

The communistic spirit of Indian social life and the communal institutions like family and caste, *Jati* and *Samaj*, all tend to regulate the aggressive proprietary rights, and to smooth the acerbities of a violent and venal individualism, which seems to too many in the West the fruition of civilisation. In politics the election by the caste as an industrial or functional group would imply a representation of separate industrial or functional interests and solve what has been an insoluble problem as regards the representation of minorities in a working democracy. In social life, there will be no semi-military organisation to check the development of individuality, while at the same time there will be none of the license and abuses of a sordid individualism. In civilisation India stands for a loftier ideal of communism. Not state-socialism with its bureaucratic methods, inspection and inspectors, but a regulated and refined system of private property with an unfettered freedom of opportunity for all, is the Indian conception of economic organisation. There is no doubt that there will be a completeness of individual liberty here which can hardly be attained in a socialist state, while at the same time individual industry will be applied to socially serviceable uses and individual income shorn of the

unearned and excessive elements which by their appropriation and expenditure have represented social waste in the West. Herein lie the essential significance and value of the Indian economic order —its contribution to the more socialised and more humanised art of wealth. This wider art of wealth which communism in India represents implies a re-statement of the fundamental axioms and postulates of Western industrial life. In India communism is encouraged and developed by the ideal of plain-living and high-thinking, by the religious respect for the virtues of poverty and self-denial. This calls for a revision of the Western economic theory of wants which implies their indefinite multiplication for individual ends. India has her discipline of the limitation of personal wants. She recognises the primacy of the primary wants, but she duly regulates the secondary and tertiary wants. This involves a radical change in the motives of economic life. The Indian ideal of subordination of the material wants to the needs of the higher life is the only corrective of Western unrest. Neither a competitive and contentious individualism with its motto of "Laissez-faire," nor state-socialism with its semi-military control of private industry, neither trades-unionism and industrial democracy nor the central direction of industry by trusts or cartels, neither the peaceful political methods of the Labour Party nor the revolutionary ideals of Larkinism or syndicalism, neither the allurements of a sense-born art nor the bargainings of an utilitarian ethics can bring peace to the restless, unstable, and "morally crude" world of Western industrialism. Carlyle's sarcasm and

Ruskin's idealism, William Morris's earnestness and Toynbee's sympathy, have failed to arrest the tide of corruption and de-humanisation of the industrial world. It is only the old-world Indian ideal of self-denial and the Indian discipline of the limitation of non-social wants that can radically cure the ills of the industrial life of the West. It would subordinate the mere physical and artificial wants to the higher spiritual and social needs, moralise the industrial world where greed has become the first law, and regulate it in the interests of the higher ethical and spiritual life whose demands are ultimately more compelling than those of the former. The conflicts of labour and capital, of individualism and socialism in every field of life, will vanish before the dawn of this inner vision, and the industrial world will then have peace and stability ; and industry, re-united to art and ethics, will foster culture, refinement, and the real well-being of society.

Such are the economic ideals of India and such their meaning and value for the West. Such ideals should always be present in the mind of the Indian economist and aimed at in all practical work of social reconstruction. The economist should no longer confine himself to the study or the lecture-room with its window only upon the market-place. The time for action has begun. If he has so long spent his life within this narrowed range, let him now emerge into the world. For are not the grim poverty, the squalor and degradation, the dirt and disease of the coolies of the uninhabitable *bustis* of our sordid cities, and the mute despair, helplessness, and bankruptcy of our deserted villages alike calling on him to be ready with a programme and a policy ?

Broken homesteads and disjointed families, bankrupt zamindars and ill-fed middle class, debilitated crafts and wasted lands, increased death-rate and greater criminality, are not these all alike demanding not vague Utopias of good wishes for the country at large but definite plans of regional survey and of corresponding reconstruction?

The field of the student's survey and reconstruction is that of our deserted villages and vampire cities. Let the Indian sociologist come out of his seclusion, and, facing these mean *bustis* and these derelict lands, exclaim in his highest moment of inspiration and resolve, "My Utopia is here and nowhere else." The history that is recorded in our Puranas and Itihashas is but the drama of the accomplishments and failures of our race to determine its material environment and create its own spiritual conditions, as it would have them be. What are the Ramayana and the Mahabharata, what is our whole classical literature, but the accumulated ethical and spiritual wisdom of the race, by and through which the Indian prepared himself for the highest duties to society? What are Indian art, Indian sculpture, and Indian architecture but the effort to make the material shell of the Indian town symbolise the ideals of the best citizens of our community from age to age? What is Indian religion itself but the recurrent effort to establish on earth here and now the paradise of the gods? And what is Indian sociology, Arthashastra-Sukraniti-Manara Dharmashastra—but the perennial effort to construct, improve, and develop cities and villages according to the cultural aspirations of the best citizens of India in different ages?

That is Indian wisdom, and that is now calling to the theoretical student, disciplined in Western learning, and with him to Western thought and learning as well, to rise beyond the futile specialisms, historical and scientific, of an age which has normalised the subordination of morals and politics to expediency, and isolated them both from science and from life. This re-orientation of life and thought will rescue the energies which are now being dissipated here and there between factory and art-school, waste land and laboratory, slum and mansion, and bring about a synthesis of the science and the humanities in the art of regional reconstruction, rural and urban alike.

# INDEX I

## SUBJECTS

*Numbers*

Lakh = 100,000 Crore = 100 lakhs

*Money*

1 anna = 1 penny
16 annas = 1 rupee = 1*s*. 4*d*.
15 rupees = £1 sterling

*Weight* (*Bengal*)

1 seer = 2 lbs. avoirdupois
40 seers = 1 maund = 80 lbs.
28 maunds = 1 ton

# INDEX II

## PROPER NAMES AND LITERARY REFERENCES

THE END

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